

**MEDICAL**  
**TIMES**

Journal for the Family Physician

February 1960

**Diagnosis and Treatment  
of Facial Pain**

**Morning Headache**

**The EEG and Headache**



*Melvyn Brindley*

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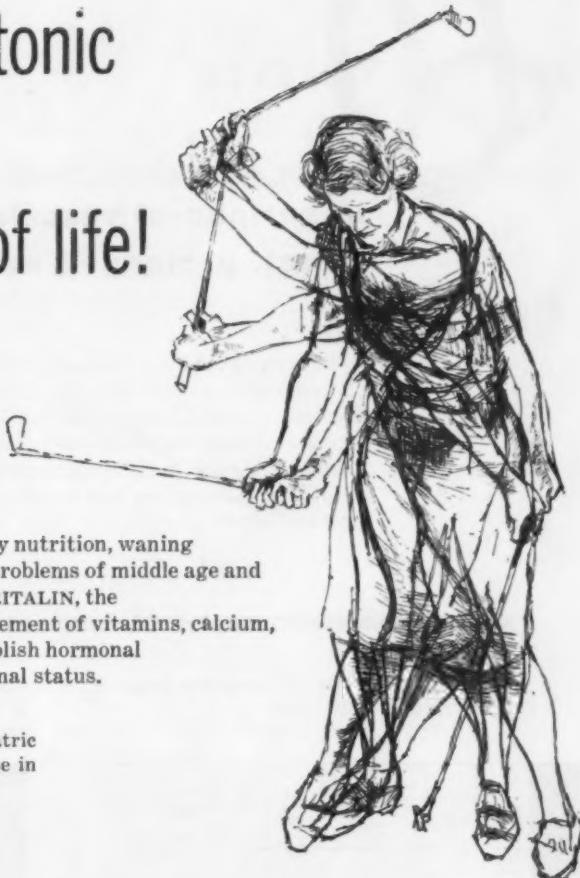
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**References:** 1. Natenson, A. L.: J. Am. Geriatrics Soc. 6:534 (July) 1958.  
2. Bachrach, S.: J. Am. Geriatrics Soc. 7:408 (May) 1959.

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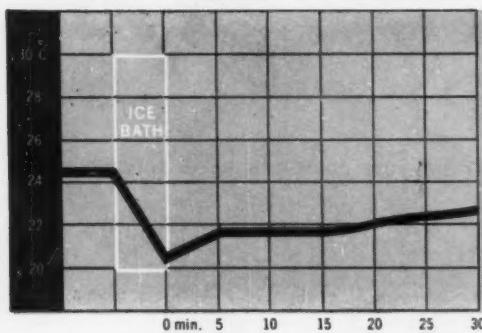


**in peripheral vascular disease . . .  
direct, prolonged action**

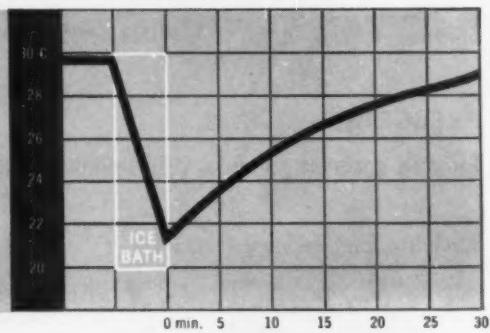
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Reference: 1. Kappert, A.: Schweiz. med. Wochenschr. 85:273, 1955. Bibliography: 1. Van Wijk, T.W.: Angiology 4:103, 1953. 2. Gilhespy, R.O.: Brit. M.J. 2:1543, 1957. 3. Gilhespy, R.O.: Angiology 7:27, 1956. 4. Winsor, T.: Angiology 4:134, 1953. 5. Reeder, J.J.: Geneesk. gids. 31:370, 1953.



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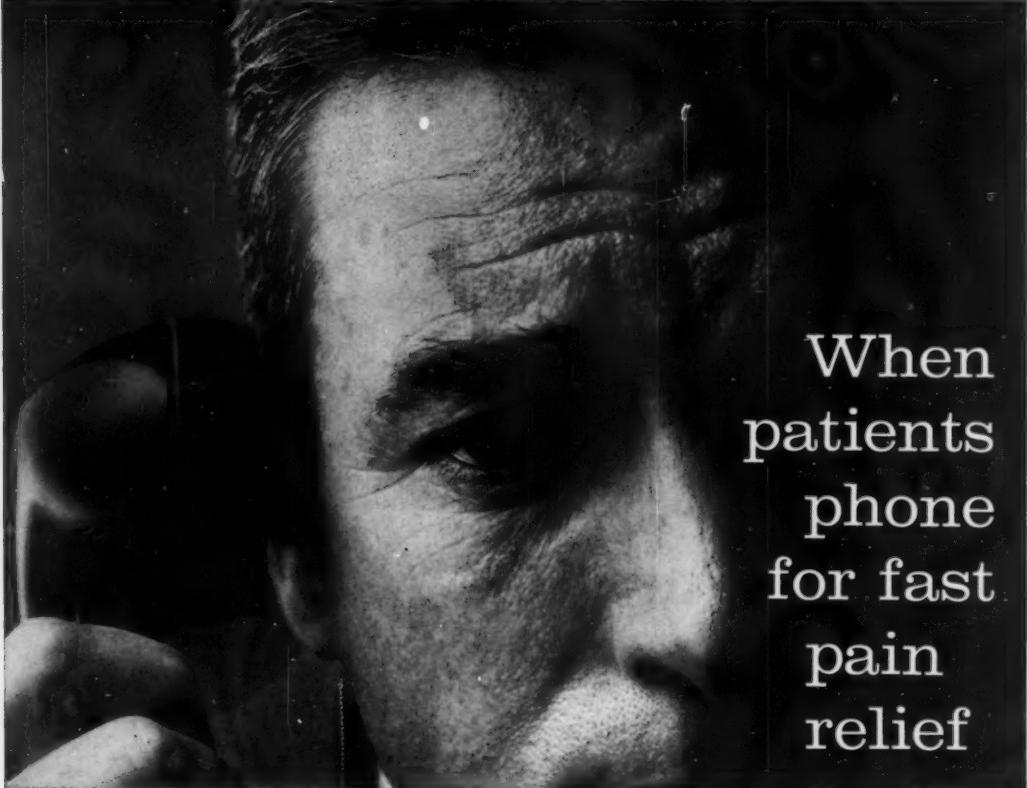
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Accident on the slope: Members of the National Ski Patrol have brought the injured young woman back to the ski center, where Dr. Milton Wolf (kneeling, center) quickly examines her. The scene takes place at Mt. Snow, a winter sports area in southern Vermont, and was painted by Melbourne Brindle. For more about the cover and information that can help prevent skiing accidents, see page 226a.



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**1** Harrison, J.W.E.; Packman, E.W., and Abbott, D.D.: *J. Am. Pharm. Assn. (Scient. Ed.)* **48**:50-56 (Jan.) 1959.

**2** Paul, W.D.; Dryer, R.L., and Routh, J.L.: *J. Am. Pharm. Assn. (Scient. Ed.)* **39**:21 (Jan.) 1950.

**3** Tebrock, H.E.: *Ind. Med. & Surg.* **20**:480-482, 1951.

**4** Muir, A., and Cossar, I.A.: *Brit. M.J.* **2**:7-12 (July 2) 1955.

**5** Waterson, A.P.: *Brit. M.J.* **2**:1531 (Dec. 24) 1955.

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**9** Trimble, G.X.: *Correspondence, J. Am. Med. Assn.* **164**:323-324 (May 18) 1957.

**10** Lange, H.F.: *Gastroenterology* **33**: 770-777 and 778-788 (Nov.) 1957.

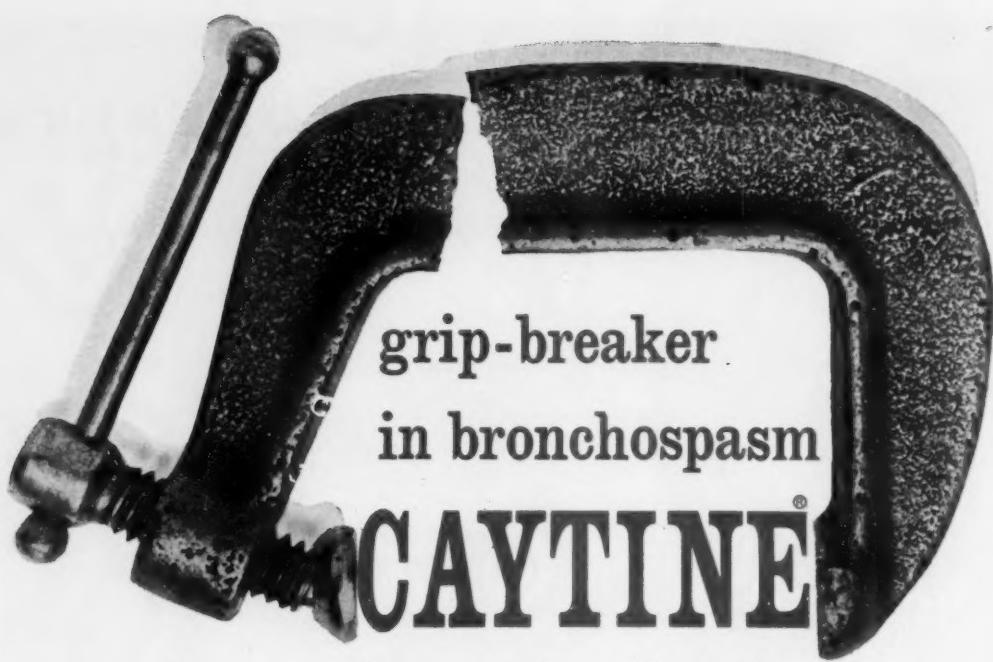
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(1) Leslie, A., and Simmons, D. H.: Am. J. M. Sc. 234:321, 1957. (2) Settel, E.: Am. Pract. & Digest Treat. 8:1249, 1957.

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**References:** 1. Cronk, G. A.; Naumann, D. E., and Casson, K.: Antibiotics Annual 1957-1958, New York, Medical Encyclopedia, Inc., 1958, p. 397. 2. Childs, A. J.: Brit. M. J. 1:660 (Mar. 24) 1956. 3. Newcomer, V. D.; Wright, E. T., and Sternberg, T. R.: Antibiotics Annual 1954-1955, New York, Medical Encyclopedia, Inc., 1955, p. 686.

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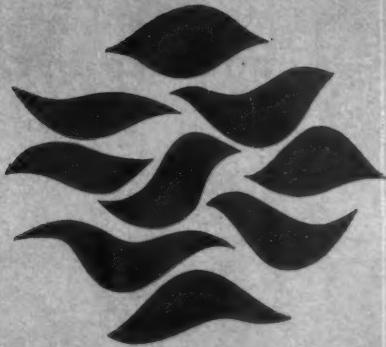
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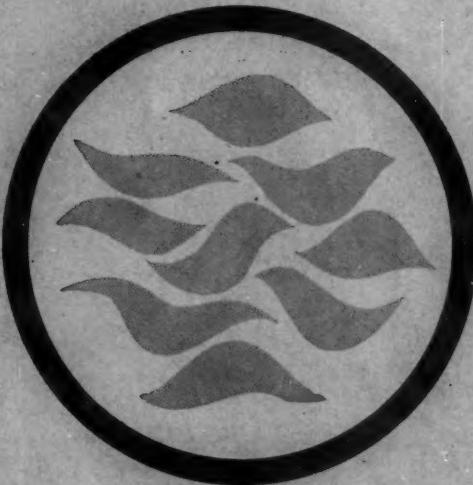
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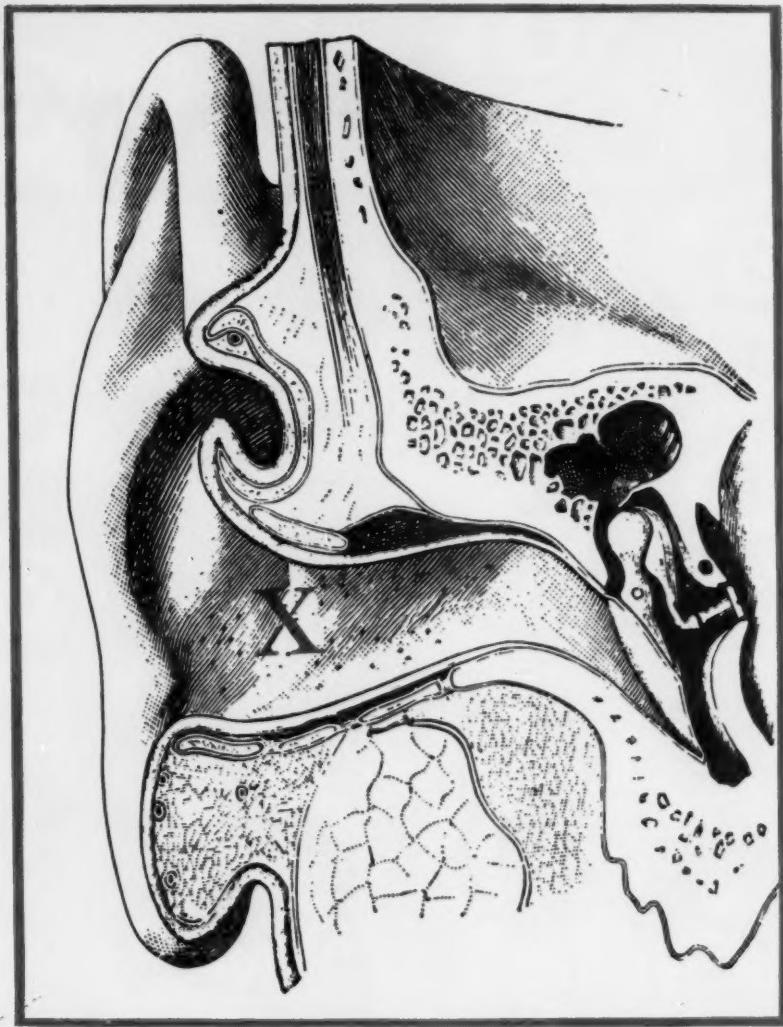
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"...BETTER RESULTS THAN EVER BEFORE..."\* IN  
**OTITIS EXTERNA**  
AND CHRONIC OTITIS MEDIA WITH  
**OTOBIOPTIC®**  
**ANTIBIOTIC / ANTIFUNGAL EAR DROPS**

3.5 mg. neomycin (from sulfate) and 50 mg. sodium propionate per cc. — in 15 cc. dropper bottles.

\*Lawson, G. W.: Diffuse Otitis Externa and Its Effective Treatment, Postgrad. Med. 22:501, (Nov.) 1957.

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White



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yes

**Polaramine  
Repetabs**

**are the answer**

when your allergic patient is suffering with the old familiar signs: rhinorrhea, sneezing, lacrimation and irritated, inflamed and congested mucous membranes of the respiratory tract.

When you prescribe POLARAMINE REPETABS (or any form of POLARAMINE), you can control the discomfort of seasonal and non-seasonal allergies, allergic complications of respiratory illnesses, allergic derma-



toses, and drug and serum reactions. POLARAMINE is the *anti-histaminic* which controls allergic reactions by effectively antagonizing the effects of histamine at therapeutic doses lower than those necessary with other available antihistamines.

Histamine is present in those body areas exposed to contact with the external environment: the skin, the upper gastrointestinal tract and the respiratory tree. For this very reason, if your patient develops a cold or illness with allergic complications, his symptoms are particularly troublesome. When an antigen provokes an antibody response, histamine is released, and the familiar symptoms of allergy follow. However, POLARAMINE can effectively control allergic symptoms.

POLARAMINE REPETABS (4 mg. and 6 mg. dosage forms for your patients' convenience) and POLARAMINE Tablets (2 mg.) are of unrivaled effectiveness and safety at doses lower than other antihistamines. Summarizing treatment of a recent group of 100 allergic patients, Babcock and Packard state that POLARAMINE REPETABS were "especially effective in patients who presented sudden, acute allergy symptoms."<sup>1</sup> Remember, too, that POLARAMINE Syrup (yes, it tastes good!) is very helpful in dealing with the young allergic patient or those preferring liquid medication.

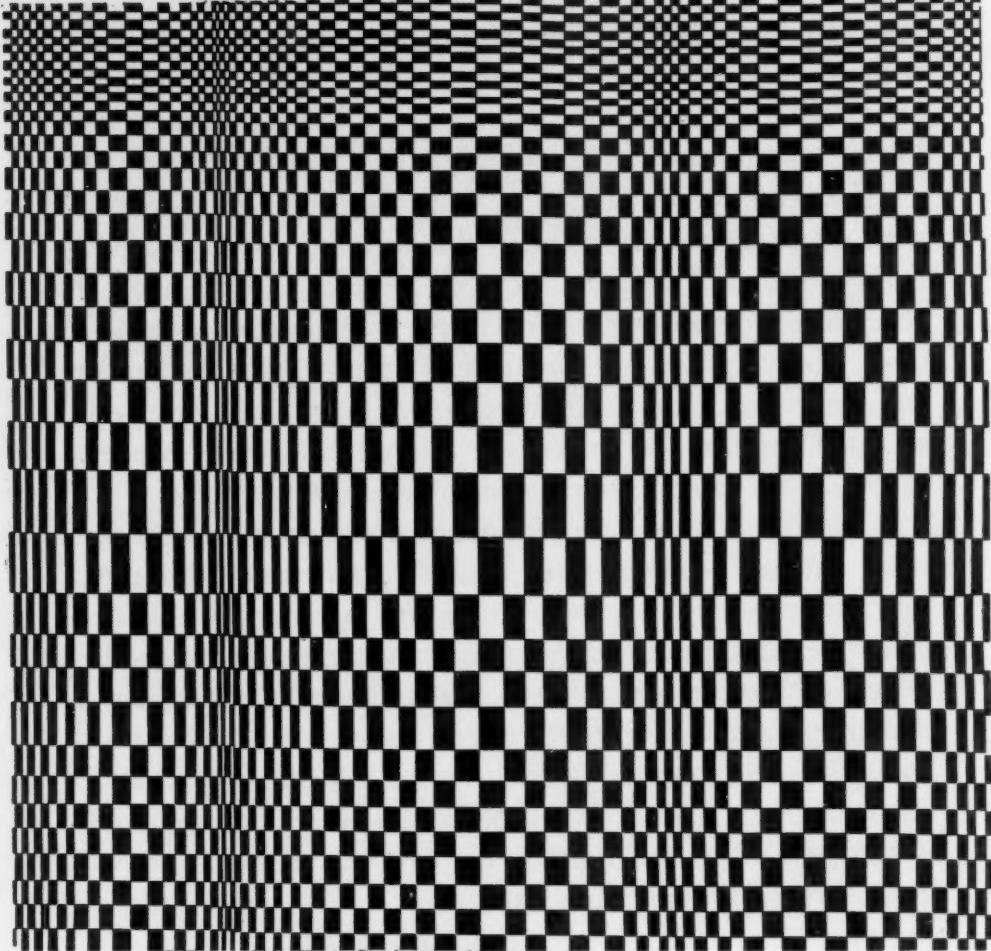
**Dosage:** REPETABS, 6 mg. and 4 mg.—One REPETAB in the morning and one REPETAB in the evening. Tablets, 2 mg.—one t.i.d. or q.i.d.; children under 12, one-half tablet t.i.d. or q.i.d.; infants, one-quarter tablet t.i.d. or q.i.d. Syrup, 2 mg. per 5 cc.—Adults, one teaspoonful t.i.d. or q.i.d.; children under 12, one-half teaspoonful t.i.d. or q.i.d.; infants, one-quarter teaspoonful t.i.d. or q.i.d.

**Supply:** POLARAMINE REPETABS, 6 mg., bottles of 100 and 1000; 4 mg., bottles of 100 and 1000. Tablets, 2 mg., bottles of 100 and 1000. Syrup, 2 mg. per 5 cc., 16 oz. bottles.

1. Babcock, G., Jr., and Packard, L. A.: Clin. Med. 6:985 (June) 1959.

S C H E R I N G      C O R P O R A T I O N

WHEN **TENSION** DISRUPTS TREATMENT



**ELIXIR ALURATE** DISRUPTS TENSION

**Dependable, prompt-acting daytime sedative.**

Broad margin of safety. Virtually no drowsiness. Over a quarter century of successful clinical use. Alurate is effective by itself and compatible with a wide range of other drugs. To avoid barbiturate identification or abuse, Alurate is available as Elixir Alurate (cherry-red) and Elixir Alurate Verdum (emerald-green).

Adults:  $\frac{1}{2}$  to 1 teaspoonful of either Elixir Alurate or Elixir Alurate Verdum, 3 times daily. **ALURATE®—brand of aprobarbital.**

**ROCHE LABORATORIES • Division of Hoffmann-La Roche Inc • Nutley 10, N.J.**



## Off the Record...

### True Stories From Our Readers

Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imported sculptulite figurine . . . an amusing caricature of a physician . . . will be sent in appreciation for each accepted contribution.

#### Too Old For Bondage

About six months ago, I saw a 60-year-old married woman who had cholelithiasis. Since she was rather obese, I placed her on an appetite depressant and explained that we would operate as soon as she lost enough weight.

She lost weight satisfactorily but kept complaining that the medicine "affected" her. Since she would not elaborate on this and seemed to be doing well, I did not change the medication. After three months we removed her gall bladder without difficulty.

Recently she came in complaining that she was "gaining all that weight back."

"But please don't give me that same medicine again. It affects me," she said.

Losing patience, I said, "What do you mean, it affects you?"

Back came this reply from the 60-year-old woman: "Oh, Doctor! When I take that medicine I'm just passion's slave."

R.C.M., M.D.  
Glendale, Ariz.

#### Pleasant Reminder

Soon after the end of the Korean War, I was interviewing a new O.B. patient. I asked her, thinking she was from some other part of the U.S. because she was the wife of a recently discharged soldier, where she came from. She said, with a smile, "You ought to know; you delivered me yourself."

K.H.B., M.D.  
Sterling, Colo.

#### Just Slightly Askew, Dear

Examining a young man, I remarked about the bullet wounds in his cheek. He stated that he had been shot during World War II while in the U.S. Army. His young daughter, standing by, looked up eagerly and said, "Did it knock you off your horse, Daddy?"

G.W.H., M.D.  
Pueblo, Colo.

#### Next Question, Please

The following true incident occurred in my office and has given me many chuckles in its recollection. It is also a good illustration of the direct way in which children think.

An obstetrical patient, returning for one of her routine prenatal visits, had in tow one of her previous offspring of some three summers past. According to routine she brought with her a small bottle containing a urine specimen which she surreptitiously (she thought) palmed off to me. But the sharp eyes and bright inquisitiveness of her little boy were not to be deceived that easily.

"Mamma, what did you give the Doctor?" was the instantaneous query. This question was twice repeated with increasing insistence in spite of gentle "shushes" from mother. Finally when he more volubly reiterated his question his mother leaned over and whispered, "That was just some of Mother's pee pee for the doctor."

Little Billy looked dumbfounded for a moment  
*Concluded on page 29a*

# NEW spray-on surgical film controls bacteria even resistant hospital "staph"



**REZIFILM** is a methacrylate resin.

On the skin, it forms a clear, firm, flexible barrier against airborne microorganisms.

This physical protection is supplemented by the antibacterial activity of TMTD (tetramethylthiuram disulfide), readily diffusible

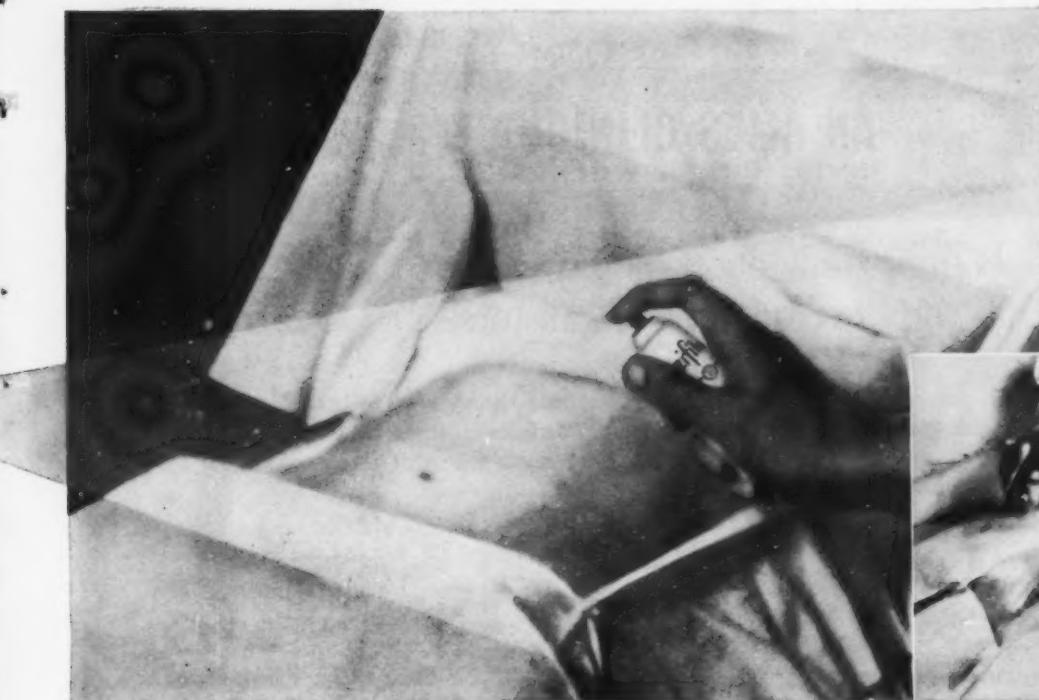
from the plastic film to the skin beneath. TMTD, which is neither an antibiotic nor a sulfonamide, is highly active

against a wide range of pathogenic bacteria, including many organisms resistant to the most commonly used antibiotics.<sup>1</sup>

*Advantages:*

- incision can be made directly through film,<sup>2</sup> minimizing or eliminating need for skin towels • does not impede healing<sup>3</sup>
  - no sensitization reactions reported
- does not interfere with joint movement • more comfortable than adhesive bandages • protects against clothing irritation<sup>4</sup>
- protects skin around enterostomy and fistula openings<sup>5</sup>

**REZIFILM** is *not* indicated as a dressing for second or third degree burns or for bleeding or granulating wounds.



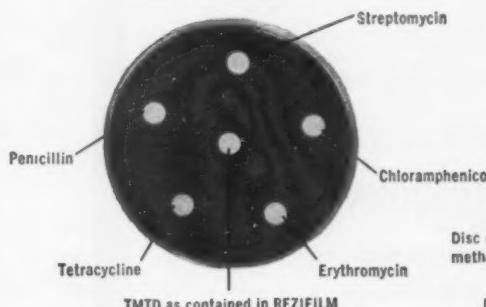
**PRE-OPERATIVELY**  
Rezifilm is applied after prepping of the surgical area. It functions as a secondary drape.



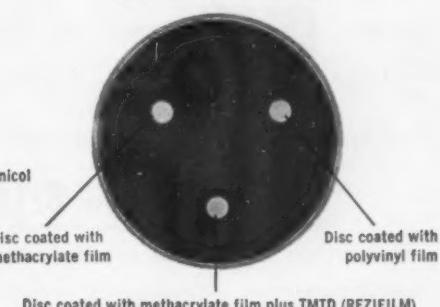
**POSTOPERATIVELY**  
Rezifilm is applied following final closure of the incision. It provides comfortable protection against infection and irritation.

### Compare the antibacterial activity of REZIFILM<sup>6</sup>

Comparison with other antibacterial agents



Comparison with other spray film preparations



Streaked cultures of coagulase-positive *Staphylococcus aureus*, phage type 80/81; incubated 24 hours at 37°C.

An interesting 16 mm. color motion picture film (10 minutes) showing the use of REZIFILM in surgery is available free of charge. Excellent for hospital and medical society meetings. Write to: Professional Service Department, Squibb, 745 Fifth Avenue, New York 22, N. Y.

Supplied: 6 oz. (avd.) spray dispensers cans.

References: 1. Eisenberg, G. M.: *Antibiotic Med. & Clin. Ther.*, 6:594 (Oct.) 1959. 2. Thomson, J. E. M.: Report to The Squibb Institute for Medical Research, June, 1957. 3. Maloney, J. V. and Mulder, D. G.: *Am. Surgeon* 23:588 (April) 1957. 4. Bucher, R. M.: Report to The Squibb Institute for Medical Research, July 3, 1957. 5. Hammond, J. A.: Report to The Squibb Institute for Medical Research, May 3, 1957. 6. Eisenberg, G. M.; Weiss, W.; Spivack, A. P.; Bassett, J. G.; Ferguson, L. K., and Flippin, H. F.: Adapted from Scientific Exhibit, A.M.A. Meeting, June 8-12, 1959.

- provides skin asepsis, both preoperatively and postoperatively
- preoperative preparation made more convenient and more secure
- wound always in sight through window-clear film
- more convenient and more economical than ordinary dressings

# Rezifilm

SQUIBB SURGICAL

SPRAY DRESSING  
transparent plastic barrier  
with antibacterial action



SQUIBB

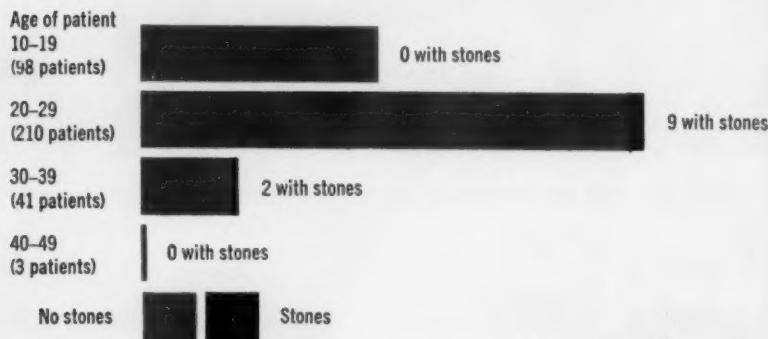
SQUIBB QUALITY—THE PRICELESS INGREDIENT

## AN AMES CLINIQUICK®

CLINICAL BRIEFS FOR MODERN PRACTICE

### Is pregnancy an etiological factor in the development of gallstones?

No definite relationship between pregnancy and the formation of gallstones was demonstrated in a recently concluded clinical study. Of 352 asymptomatic pregnant women studied by interview, clinical history, and cholecystography, only 11 (3.1 per cent) had gallstones.



Source: Large, A. M.; Lofstrom, J. E., and Stevenson, C. S.: A.M.A. Arch. Surg. 78:966, 1959.

*When functional GI distress indicates medical management...*

### DECHOLIN® with BELLADONNA

(dehydrocholic acid with belladonna, AMES)

*provides true hydrocholeresis plus reliable spasmolysis*

In medical management. . .recommended for patients with a clinical history of biliary tract disease when gallbladder disease has not been confirmed.\*

\*Best, R. R.: Mod. Med. 25:264 (March 15) 1957.

Available: DECHOLIN/Belladonna tablets (dehydrocholic acid, AMES) 3 1/4 gr. (250 mg.) and extract of belladonna 1/4 gr. (10 mg.). Bottles of 100 and 500.

### DECHOLIN® for hydrocholeresis

(dehydrocholic acid, AMES)

Available: DECHOLIN tablets: (dehydrocholic acid, AMES) 3 1/4 gr. (250 mg.). Bottles of 100, 500, and 1,000.

AMES  
COMPANY, INC  
Elkhart • Indiana  
Toronto • Canada



04260

## Off the Record...

Concluded from page 25a

ment, and then exclaimed in wide-eyed astonishment, "What's the matter with the Doctor? Doesn't he have any?"

R.S.H., M.D.  
Santa Rosa, Calif.

### "A Little Learning..."

A schoolmarm went to the office of a physician who was always intent and very much to the point about his work. When asked her complaint, the teacher tried hard to display her knowledge of anatomy.

"Why, doctor," she said, "I've had a very sore *vulva* for several days."

She barely had the words out before she found herself on the table and in the old *lithotomy* position.

Clutching at her skirts and protesting loudly, she pointed at her mouth. "No, no—it's up here!" she shouted.

The doctor had a hearty chuckle before admonishing the woman to either review her anatomical terms or to stick to lay language.

C.V.R., M.D.  
Anderson, Ind.

### But No Rock Garden

A patient told my wife about a new office-home combination that was for sale in our area, and finished her glowing description with the comment that "the rocks alone are worth \$5000." Anyway, that's the way my wife heard it.

Wishing to strike while the iron was hot, my wife went to look at the house right away. That afternoon she came into the office and exclaimed: "The house was beautiful, but I didn't see any rocks worth \$1, let alone \$5000!"

"Dumbbell," I told her, "the patient meant *rugs*, not rocks."

This is a true story, and I'm still ribbing my wife about it.

L.S., M.D.  
Dorchester, Mass.

### Those Lucky Girls

The young man whose wife was having her first child feverishly paced the length of the reception room for expectant fathers. He paced and smoked cigarette after cigarette. His hair was unkempt, his clothes rumpled. Altogether, he appeared to be a very agitated young husband.

Suddenly the delivery room nurse appeared and, with a broad smile, announced that the wife had delivered a beautiful baby girl.

"Thank God," he exclaimed, "my child will never have to suffer as I have."

P.M.B., M.D.  
Shreveport, La.

### Hands Off!

As a medical consultant for a home for the aged in a nearby community, I was making my usual rounds, accompanied by the supervising nurse. We encountered an elderly woman in a "walker" in the hall. The nurse introduced me to the woman, who is 98 years old and slightly senile. I acknowledged the introduction and playfully put my arm around her waist, a gesture that brought forth an immediate response. "No loving!" the old woman shouted at me.

R.J.M., M.D.  
Harrisburg, Pa.

### Healthy Temper, Too

A crusty 87-year-old white male walked into my office for a check up. He was in excellent condition for his age and I told him so, whereupon he brusquely asked, "How old do you think I am?"

Wishing to flatter and also impress the patient with his good state of health, I eased out, "Oh, about 75-years-old."

He snorted angrily: "You're a bigger damn fool than I thought you were," and he stamped out of my office.

J.A.P., M.D.  
Waupun, Wis.

*another patient with hypertension?*

—



*indicated  
in all degrees  
of hypertension*

*effective  
by itself in most  
hypertensives*

# HYDROPRES\*

HYDRODIURIL® with RESERPINE  
(HYDROCHLOROTHIAZIDE)

*HYDROPRES can be used:*

- *alone* (In most patients, HYDROPRES is the only antihypertensive medication needed.)
- *as basic therapy, adding other drugs if necessary* (Should other antihypertensive agents need to be added, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced.)
- *as replacement therapy, in patients now treated with other drugs* (In patients treated with rauwolfa or its derivatives, HYDROPRES can produce a greater antihypertensive effect. Moreover, HYDROPRES is less likely to cause side effects characteristic of rauwolfa, since the required dosage of reserpine is usually less when given in combination with HydroDIURIL than when given alone.)

## HYDROPRES-25

25 mg. HydroDIURIL, 0.125 mg. reserpine.  
One tablet one to four times a day.

## HYDROPRES-50

50 mg. HydroDIURIL, 0.125 mg. reserpine.  
One tablet one or two times a day.

If the patient is receiving ganglion blocking drugs or hydralazine,  
their dosage must be cut in half when HYDROPRES is added.

For additional information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.



MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

\*HYDROPRES AND HYDRODIURIL ARE TRADEMARKS OF MERCK & CO., INC.



All the advantages of liquid SPENSIN-PS in convenient tablet form. Two synergistic antibiotics, polymyxin and dihydrostreptomycin for decisive bactericidal action. The activated adsorbent of 5 to 8 times kaolin's capacity: *Attapulgite*—shown by *in vitro* studies to adsorb enteropathogenic viruses and bacterial endotoxins.

SPENSIN-PS: removes bacterial endotoxins • kills organisms susceptible to polymyxin and dihydrostreptomycin • restores normal fluid absorption • soothes irritated intestinal mucosa • produces stools of normal consistency.



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New York 16, N.Y.

## SPENSIN®-PS

Tablets and Suspension: Activated attapulgite, pectin, alumina with polymyxin B sulfate and dihydrostreptomycin



## Diagnosis, Please!

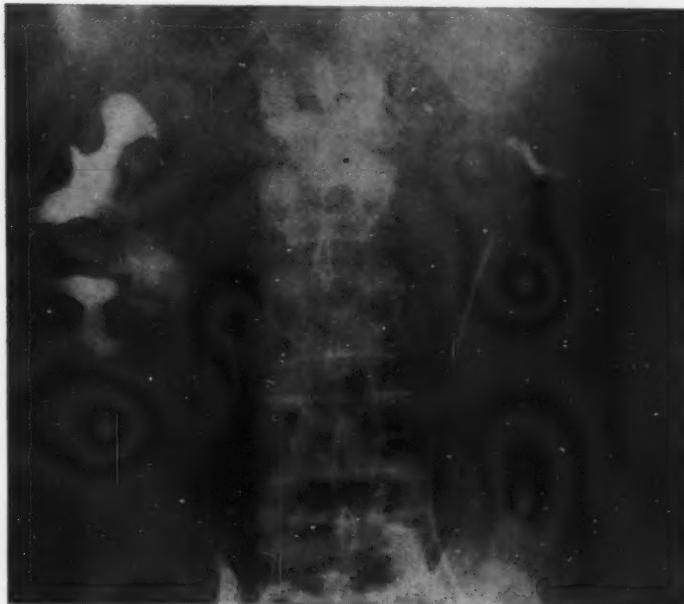
Edited by Maxwell H. Poppel, M.D., F.A.C.R., Professor of Radiology,  
New York University College of Medicine and Director of Radiology, Bellevue Hospital Center

*Fifty-eight year old male. Chief Complaints—3 months of dysuria, nocturia and painless hematuria.*

### Which is your diagnosis?

- 1. Polycystic kidney
- 2. Stone in right ureter
- 3. Ca. of right kidney
- 4. Bladder tumor

*(Answer on page 224a)*



# Full-Time Corrective Action

in mild depression  
and chronic fatigue

# Deaner®

tablets deanol acetamidobenzoate

Improves *night-time* restoration and *day-time* performance

- Gradually prepares patient to awaken better rested and more alert
  - ...permits sounder sleep
  - ...lessens sleep requirements
- Increases daytime energy
- Counteracts mild depression
  - ...acts to stabilize emotionally disturbed patients with or without concomitant disease
- Useful in treating children with learning defects and behavior problems...lengthens attention span
- Unlike monoamine inhibitors. It is not necessary to monitor Deaner's administration with repeated laboratory tests...Deaner may be given with safety to patients with previous or current liver disease, kidney disease or infectious diseases.

'Deaner' is supplied in scored tablets containing 25 mg. of 2-dimethylaminoethanol as the *p*-acetamidobenzoic acid salt.

## In Mild Depression

chronic fatigue and many other emotional and behavioral problems

Literature, file card and bibliography on request

Riker

Northridge,  
California

*effective cleansing*

## MASSENGILL® POWDER

*the buffered acid vaginal douche  
with low surface tension*

Surface tension of Massengill Powder in standard solution is 50 dynes/cm., compared to vinegar at 72 dynes/cm. This low surface tension enables Massengill Powder to penetrate and cleanse the folds of the vaginal mucosa. It also makes cell walls of infecting organisms more susceptible to therapy.

Massengill Powder is mildly astringent and soothing to inflamed tissue. Patients like its clean, refreshing odor.

*Valuable adjunct in management of monilia,  
trichomonas, staphylococcus and streptococcus  
vaginal infections.*

*contains:* Ammonium Alum, Boric Acid, Phenol, Menthol, Berberine, Thymol, Eucalyptol, and Methyl Salicylate.

THE S. E. MASSENGILL COMPANY

Bristol, Tennessee • New York • Kansas City • San Francisco

## CRITICAL pH ZONE



The normal vagina has a pH of 3 to 4.5, but an infection usually causes the pH to rise. An alkaline mucosa neutralizes a simple, unbuffered acid douche like vinegar within 30 minutes.

In contrast, the buffered acid douche solution of Massengill Powder (pH 3.5 - 4.5) resists neutralizing. The normal, low pH is maintained for 4 to 6 hours in ambulant patients and as long as 24 hours in recumbent patients. This low pH inhibits the propagation of monilia, trichomonas vaginalis, and pathogenic bacteria, but permits growth of the beneficial Döderlein bacillus.

## MASSENGILL® POWDER

*the buffered acid vaginal douche  
with low surface tension*

THE S. E. MASSENGILL COMPANY

Bristol, Tennessee • New York • Kansas City • San Francisco

more closely approaches the ideal diuretic



"When compared to other members of this heterocyclic group of compounds, this drug [NATURETIN] shows a significantly increased natriuresis and decreased loss of potassium and bicarbonate. In this respect it more closely approaches a natural or 'ideal diuretic.' It is effective upon continuous administration and causes no significant serum biochemical changes. It is effective in a wide variety of edematous and hypertensive states and represents a significant advance in diuretic therapy." *Ford, R.V.: Pharmacological observations on a more potent benzothiadiazine diuretic; accepted for publication by the American Heart Journal.*

# Naturētin

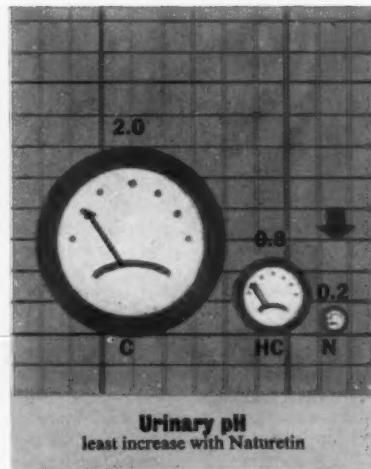
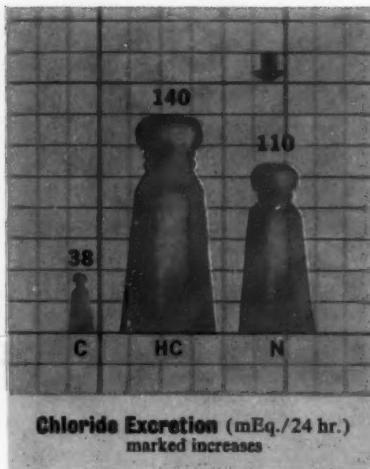
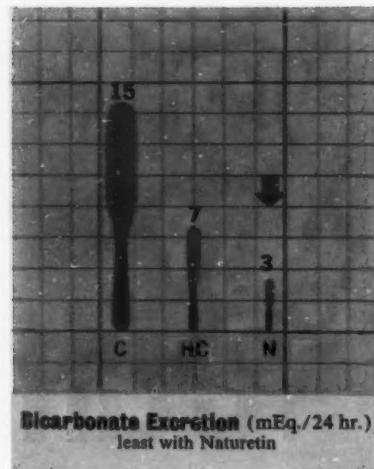
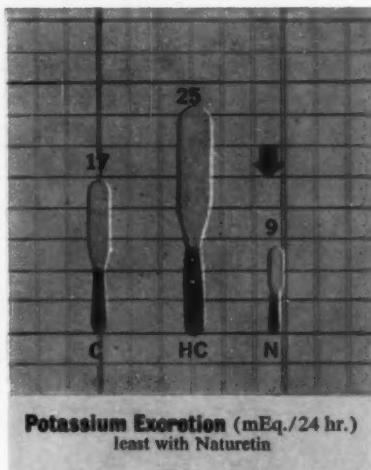
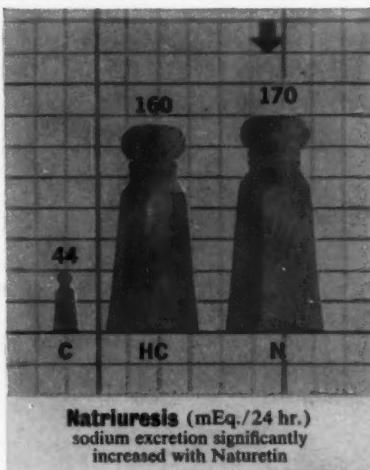
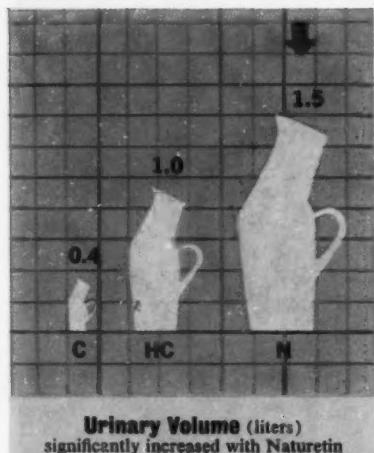
Squibb Benzodroflumethiazide

# Naturētin

Squibb Benzydroflumethiazide

more closely approaches the ideal diuretic

Comparison of electrolyte excretion pattern for the 24 hours following typical doses of chlorothiazide, hydrochlorothiazide, and Naturetin<sup>1</sup>



Typical Doses: Chlorothiazide—1,000 mg.; Hydrochlorothiazide—50 mg.; Naturetin (Benzydroflumethiazide)—5 mg.

1. Adapted from: Ford, R. V., Squibb Clin. Res. Notes 2:1 (Dec.) 1959.

# a single 5 mg. tablet once a day provides all these advantages<sup>2</sup>

- prolonged action — in excess of 18 hours
- convenient once-a-day dosage
- low daily dosage — more economical for the patient
- no significant alteration in normal electrolyte excretion pattern
- repetitively effective as a diuretic and antihypertensive
- greater potency mg. for mg.—more than 100 times as potent as chlorothiazide
- potency maintained with continued administration
- low toxicity — few side effects — low salt diets not necessary
- comparative studies with chlorothiazide, hydrochlorothiazide, and Naturetin disclose that smallest doses of Naturetin produce greater weight loss per day
- in hypertension, Naturetin, alone or in combination with other anti-hypertensives, produces significant decreases in mean blood pressure and other favorable clinical effects
- purpura and agranulocytosis not observed
- allergic reactions rarely observed

\*Reports (1959) to the Squibb Institute for Medical Research.

**Naturetin** — *Indications:* in control of edema when diuresis is required, in congestive heart failure, in the premenstrual syndrome, nephrosis and nephritis, cirrhosis with ascites, edema induced by drugs (certain steroids); in the management of hypertension, used alone, combined with Raudixin (Squibb Rauwolfia Serpentina Whole Root), or with other antihypertensive drugs, such as ganglionic blocking agents.

*Contraindications:* none, except in complete renal shutdown.

*Precautions:* when Naturetin is added to an antihypertensive regimen including hydralazine, veratrum, and/or ganglionic blocking agents, immediate reduction must be made in the dosage for all preparations; the dosage for ganglionic blocking agents must be decreased by 50% to avoid precipitous drop in blood pressure. This also applies if these hypotensive drugs are added to an established Naturetin regimen . . . in hypochloremic alkalosis with or without hypokalemia . . . in cirrhotic patients or those on digitalis therapy when reductions in serum potassium are noted . . . in diabetic patients or those predisposed to diabetes . . . when increased uric acid concentrations are noted . . . when signs—leg or abdominal cramps, pruritus, paresthesia, rash—suggestive of hypersensitivity, are noted.

**Naturetin** — *Dosage:* in edema, average dose, 5 mg., once daily, preferably in the morning; to initiate therapy, up to 20 mg., once daily or in divided doses; for maintenance, 2.5 to 5.0 mg., daily in a single dose. *In hypertension:* suggested initial dose, 5 to 20 mg. daily; for maintenance, 2.5 to 15 mg. daily, depending on the individual response of the patient. When Naturetin is added to an antihypertensive regimen with other agents, lower maintenance doses of each drug should be used.

**Naturetin** — *Supplied:* tablets of 2.5 mg. and 5 mg. (scored).

\*RAUDIXIN® AND \*NATURETIN® ARE SQUIBB TRADEMARKS.



RX  
Naturetin 5mg.  
#30  
Disp. I each  
Sig: morning



Why you can  
prescribe  
**DORIDEN®**  
for nearly  
all insomnia  
patients

Because it acts smoothly, because it is metabolized rapidly, because it apparently has no toxic effect on the liver or kidney, Doriden is indicated in many cases where barbiturates are unsuitable. With Doriden, for example, you can prescribe a good night's sleep for patients sensitive to barbiturates, elderly patients, patients with low vital capacity and poor respiratory reserve, and those unable to take barbiturates because of renal or hepatic disease. And Doriden patients awake refreshed — except in rare cases, there's no morning "hangover." **SUPPLIED:** Tablets, 0.5 Gm., C I B A  
0.25 Gm., 0.125 Gm.

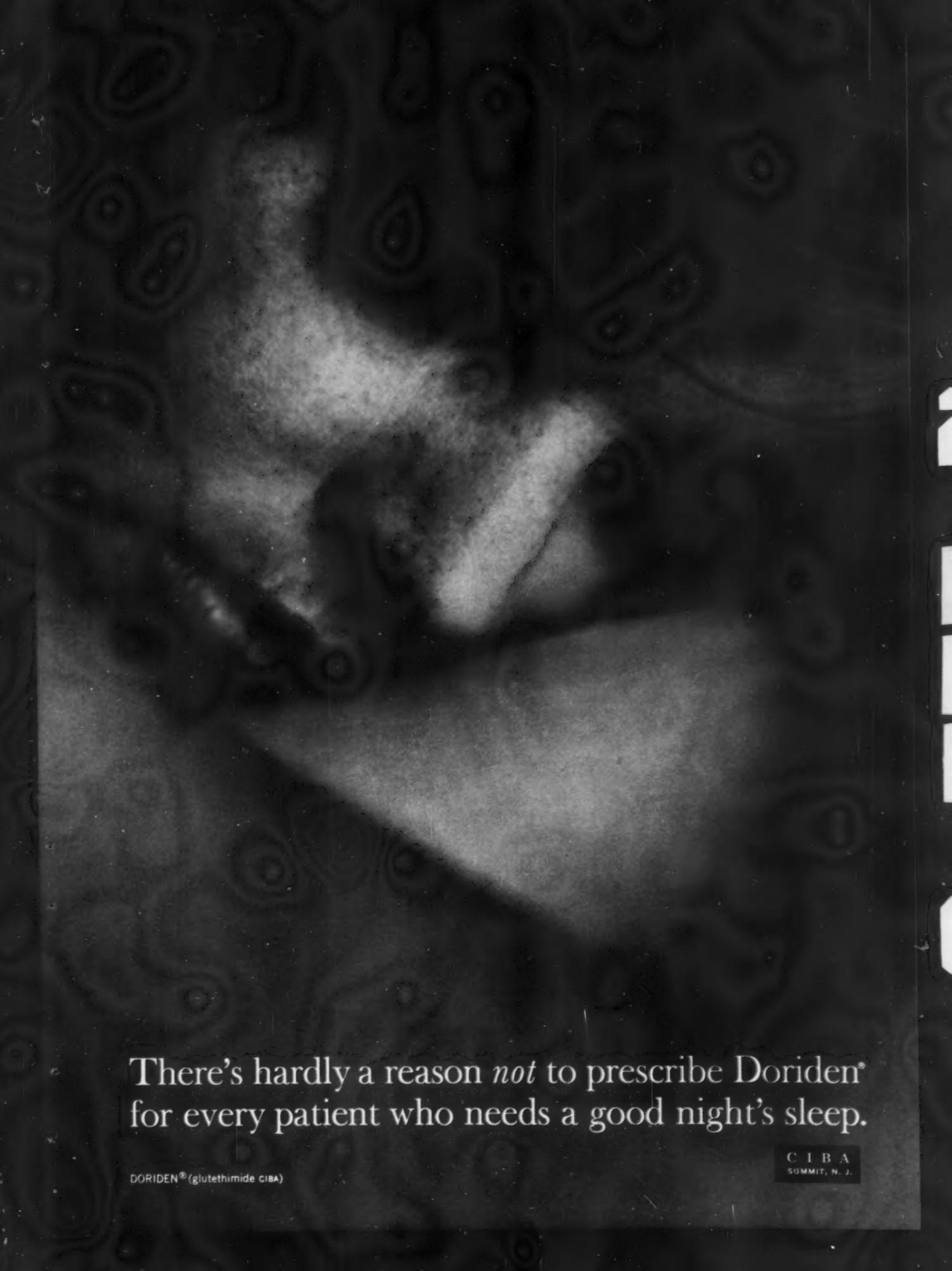
C I B A  
SUMMIT-NEW JERSEY

DORIDEN® (glutethimide CIBA)

8/2761MB

## Coming next month . . .

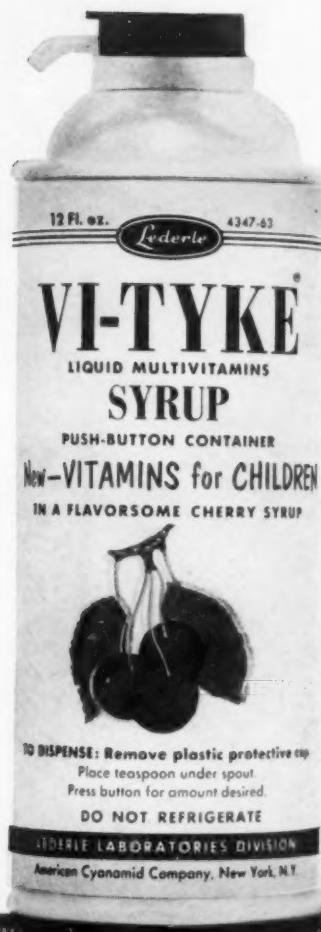
- ***Neuralgias of the Head***  
By Thomas R. Hedges, Jr., M.D. Graduate Hospital of the University of Pennsylvania and Wills Eye Hospital.
- ***Personality Factors in Motor Vehicle Accidents***  
By John J. Conger, Ph. D., Professor and Head, Division of Clinical Psychology, University of Colorado Medical Center.
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- ***The Modern Management of Syphilis***  
By C. Hunter Montgomery, M.D. Assistant Director, Venereal Disease Clinic, Houston, Texas.
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- ***Semi-Socialized Medicine in Germany***  
Karl A. Dressen, M.D., Allentown, Pennsylvania.



There's hardly a reason *not* to prescribe Doriden<sup>®</sup> for every patient who needs a good night's sleep.

DORIDEN<sup>®</sup> (glutethimide CIBA)

C I B A  
SUMMIT, N. J.



**SYRUP:** Each 5 cc. (tsp.) daily dose contains:

Vitamin A (Palmitate) 3,000 U.S.P. Units  
 Vitamin D ..... 800 U.S.P. Units  
 Thiamine HCl (B<sub>1</sub>) ..... 1.5 mg.  
 Riboflavin (B<sub>2</sub>) ..... 1.5 mg.  
 Pyridoxine HCl (B<sub>6</sub>) ..... 1 mg.  
 Ascorbic Acid (C) ..... 40 mg.  
 Vitamin B<sub>12</sub> ..... 3 meg.  
 Niacinamide ..... 10 mg.  
 Pantothenic Acid (as Panthenol) ..... 1 mg.  
 Methylparaben ..... 0.08%  
 Propylparaben ..... 0.02%

New, 12 fl. oz. push-button container. No spilling, no mess.

**PEDIATRIC DROPS:** Each 0.6 cc. daily dose contains:

Vitamin A (Palmitate) 5,000 U.S.P. Units  
 Vitamin D ..... 1,000 U.S.P. Units  
 Thiamine HCl (B<sub>1</sub>) ..... 1 mg.  
 Riboflavin (B<sub>2</sub>) ..... 0.8 mg.  
 Pyridoxine HCl (B<sub>6</sub>) ..... 1 mg.  
 Ascorbic Acid (C) ..... 50 mg.  
 Niacinamide ..... 10 mg.  
 Pantothenic Acid (as Panthenol) ..... 2 mg.  
 Vitamin B<sub>12</sub> ..... 1 meg.  
 Methylparaben ..... 0.08%  
 Propylparaben ..... 0.02%

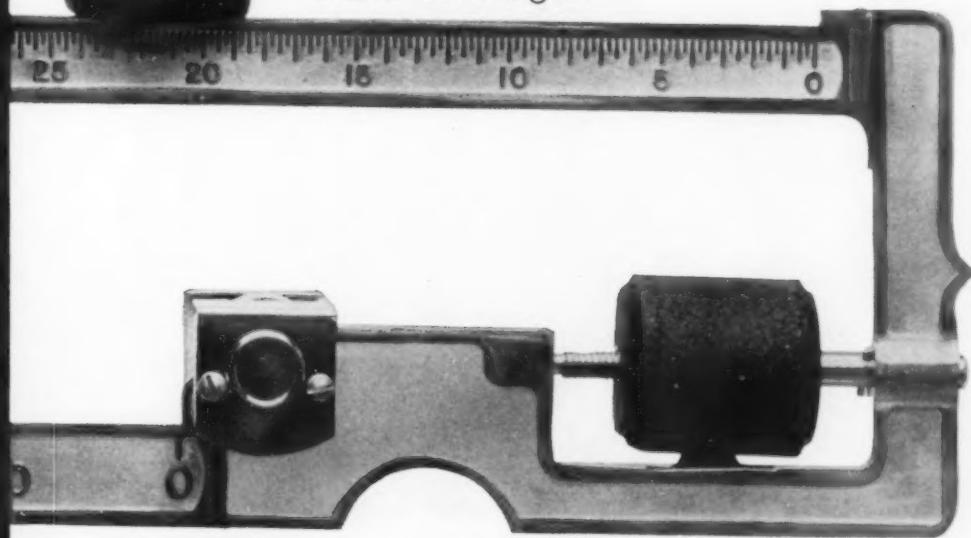
50 cc. bottle with plastic dropper.

CAPACITY  
100-LBS 300 200 150

a new member of the Lederle  
vitamin family...new cherry-  
flavored VI-TYKE for  
infants and children...keeps them  
growing...and going...better

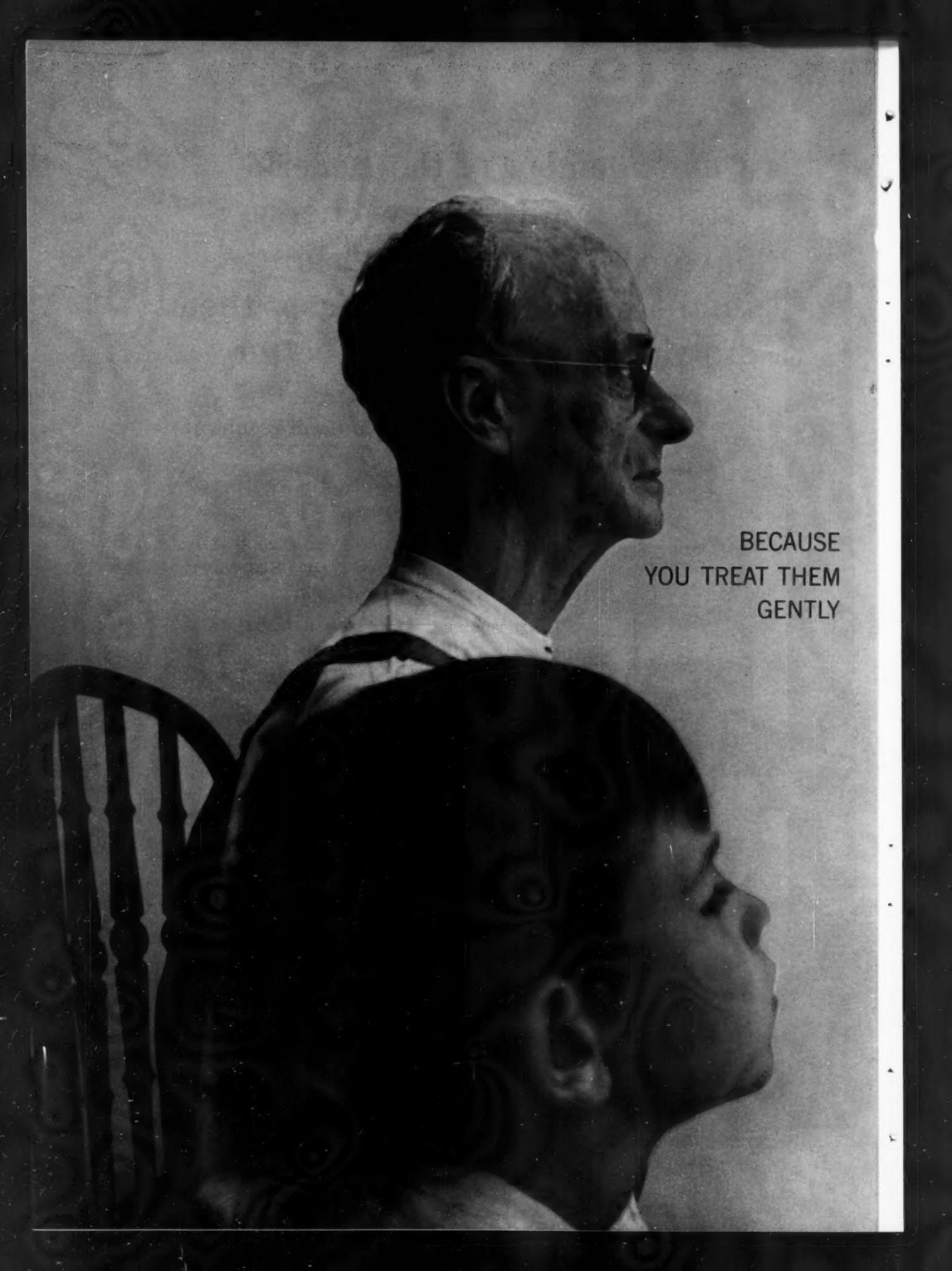


- Basic, balanced formula of essential multivitamins.
- Refreshing cherry taste—a flavor favorite with children.
- Easy-to-give with convenient, push-button syrup dispenser or calibrated dropper for pediatric drops.
- Syrup can be taken plain or as a topping for desserts. Drops are easily mixed with milk, fruit juices and other beverages.



LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York





BECAUSE  
YOU TREAT THEM  
GENTLY

*"In no case . . .  
was there any rebound congestion."*<sup>1</sup>

Your youngest patient as well as your oldest will find new Otrivin an unusually gentle yet remarkably effective nasal decongestant. Otrivin works quickly; its action is prolonged. Typical of many clinicians' reports is the one published by Kolodny<sup>1</sup>: Of 64 patients studied, 92 per cent had good or excellent results. "In no case studied was there any rebound congestion. Local side effects were minimal. . . . Extremely few systemic effects occurred. . . ."

NEW  
**OTRIVIN®** FOR GENTLE RELIEF OF STUFFY NOSE  
ON PRESCRIPTION ONLY

Otrivin is safe even for the very young. "The particularly striking feature of Otrivin solution was the absence of side effects, even in infants as young as two weeks."<sup>2</sup> "It is effective in low concentrations and is a safe nasal vasoconstrictor for even the young patient."<sup>3</sup>

**SUPPLIED:** Otrivin Nasal Solution, 0.1%; dropper bottles of 1 ounce. Otrivin Nasal Spray, 0.1%; plastic squeeze tubes of 15 ml. Otrivin Pediatric Nasal Spray, 0.05%; plastic squeeze tubes of 15 ml.

**REFERENCES:** 1. Kolodny, A. L.: Antibiotic Med. 6:452 (Aug.) 1959. 2. Davis, M. R.: To be published. 3. Peluse, S.: In press.

Otrivin® hydrochloride (xylometazoline hydrochloride CIBA)

8/8738MK

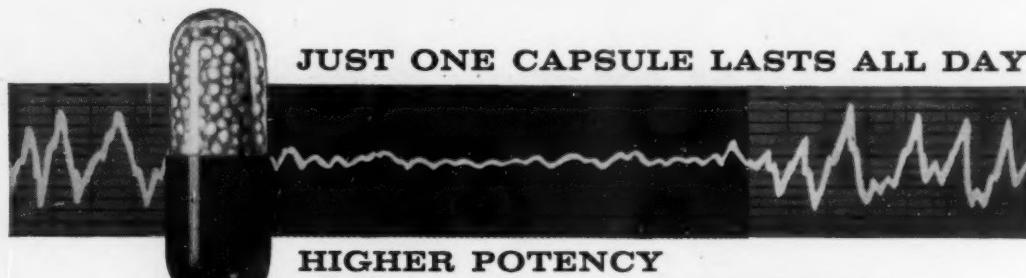
**C I B A** SUMMIT, N. J.

**NEW AND EXCLUSIVE**

**FOR SUSTAINED  
TRANQUILIZATION**

MILTOWN® (*meprobamate*) now available  
in 400 mg. continuous release capsules as

**Meprospan®-400**



**JUST ONE CAPSULE LASTS ALL DAY**

**HIGHER POTENCY  
FOR GREATER CONVENIENCE**

- relieves *both* mental and muscular tension without causing depression
- does not impair mental efficiency, motor control, or normal behavior

**Usual dosage:** One capsule at breakfast,  
one capsule with evening meal

**Available:** *Meprospan-400*, each blue capsule contains  
400 mg. Miltown (meprobamate)

*Meprospan-200*, each yellow capsule contains  
200 mg. Miltown (meprobamate)

*Both potencies in bottles of 30.*

**W<sup>®</sup>WALLACE LABORATORIES, New Brunswick, N. J.**

CHE-8426



## Coroner's Corner

A beautiful imported German apothecary jar will be sent to each contributor of an unusual case report.

One winter's night, several years ago, I was called to a small town about fifty miles from Topeka to help determine the cause of death in the case of a man of about 65 years of age, his wife of about 63, and their 42-year-old son.

The deaths were discovered by neighbors who became suspicious when they noticed that there was no smoke coming from the chimney of the family's home and that the blinds were drawn. It was after 24 hours that local authorities and neighbors decided to investigate. They found the father lying on the kitchen floor, dead; the mother, dead, was at the kitchen table, her arms folded and her head resting on her arms; the son lay in bed, apparently having died during sleep.

There was no evidence of wounds or of disruption of the furniture, and no evidence of violence. The stove was quite cold, the coal fire apparently having gone out some hours earlier. On arrival, it appeared that these three people had been dead at least 36 hours.

The bodies were brought to the mortuary, and I performed the autopsies.

On completion of the autopsies, no notable pathologic abnormalities were found beyond the presence of a rather peculiar odor within the stomachs of all three victims. This odor kept reminding me of spittoons, which older people will recall used to be fixtures in barber shops and such places. It was a definite odor, not extremely strong, but quite definite, and I could not identify it. Material was obtained

for toxicology, as the feeling was certain that this was an instance of poisoning.

Then someone remarked about a previous case in which a child inadvertently was given some Black Leaf 40. I questioned as to what Black Leaf 40 was used for, and was informed that it was an insecticide used in spraying roses. Then we recalled that this actually contained nicotine and, therefore, would naturally have a tobacco-like odor.

I took my pipe out of my pocket, having put it there on arrival at the mortuary, and sniffed it, with the intention of passing it over to one of the others just to demonstrate the smell of nicotine. It hit me at this moment that this was the familiar spittoon odor which I had been trying to identify. We again checked the odor, and felt sure that this was actually nicotine poisoning.

Later, toxicological examinations definitely identified nicotine as the source of the poison, and on filtering the ashes we found in the fireplace a piece of glass and a metal cap, both of which could be fitted and identified as part of a bottle of Black Leaf 40, a product available in drug stores and other shops.

On reconstruction and investigation of the family history, it was apparent that this was an instance of double murder and a suicide.

Though this was a tragic occurrence, it did have one light aspect: my pipe, which I've never considered a diagnostic instrument, helped identify the unknown substance.

A. A. FINK, M.D., Topeka, Kansas

# ExTEhDEd COVERAGE

BEYOND COUGH CONTROL

to protect  
the whole  
family  
more effectively



# "COTHERA" COMPOUND

## BROADENS THE RANGE OF COUGH/COLD THERAPY

### IN PALATABLE SYRUP FORM

Each teaspoonful (5 cc.) contains:  
Dimethoxanate HCl . . . . 25 mg.  
Isothipendyl HCl . . . . 2 mg.  
("Theruhistin"®)  
*l*-Phenylephrine HCl . . . . 5 mg.  
Acetaminophen . . . . . 100 mg.  
Ammonium chloride . . . . 100 mg.  
Sodium citrate . . . . . 50 mg.  
Chloroform . . . . . 0.25%  
Contains 10% alcohol

*Usual dosage:* Adults—1 to 2 teaspoonsfuls (5 to 10 cc.). Children (2 to 8 years)—½ to 1 teaspoonful. Three or four times daily.

*Supplied:* No. 936—Bottles of 16 fluidounces and 1 gallon.

Effective antitussive ("Cothera")

**TO MODERATE THE COUGH PROMPTLY—SPECIFICALLY**  
without sedation and respiratory depression

Newest antihistamine ("Theruhistin")

**TO COUNTERACT HISTAMINE-INDUCED SYMPTOMS**  
with full potency and virtually no sedation

Systemic decongestant (*l*-phenylephrine HCl)

**TO RELIEVE SINUS AND NASAL BLOCKAGE**  
by direct, sustained vasoconstricting effect

Analgesic-antipyretic (acetaminophen)

**TO RELIEVE PAIN, FEVER, AND HEADACHE**  
through potent but selective central action

Expectorants (ammonium chloride,  
sodium citrate and chloroform)

**TO SOOTHE IRRITATED MUCOSA AND PROMOTE EXPECTORATION**  
by demulcent, liquefying, and counterirritant properties

### Also available

## "COTHERA" SYRUP

Brand of Dimethoxanate hydrochloride

### CONTROLS THE COUGH . . .

*Selectively*—preserves the useful function of the cough reflex. *Safely*—non-narcotic. No toxicity reported. *Swiftly*—acts within minutes . . . lasts for hours. *Surely*—preferred to dihydrocodeinone by 12 out of 15 patients.\*

*Usual dosage:* Same as for "Cothera" Compound.

*Supplied:* No. 934—25 mg. per 5 cc. (tsp.), bottles of 16 fluidounces and 1 gallon.

\*Klein, B.: Antibiotic Med. 5:462 (July) 1958.



AYERST LABORATORIES New York 16, N. Y. • Montreal, Canada

**in potentially-serious  
pediatric infections,**



Effective against more than 30 of the commonly encountered pathogens, including *staph* and *strep*, Panalba KM assures you of prompt control in potentially-serious pediatric infections. Panalba KM makes a pleasant-tasting, readily accepted suspension.

**Formula:** After reconstitution (with tap water), each 5 cc. (teaspoonful) contains: Panmycin equivalent in action to 125 mg. tetracycline hydrochloride, and 62.5 mg. of Albamycin (as novobiocin calcium), together with 100 mg. potassium metaphosphate (KM). The suspension is stable for one week at room temperature.

**Supplied:** In 40 cc. and 60 cc. bottles.

**make**  
**Panalba KM\***  
Panmycin\* plus Albamycin\*  
with potassium metaphosphate (KM)  
**Granules**  
**your broad-spectrum**  
**antibiotic**  
**of first resort**



\*Trademark, Reg. U.S. Pat. Off.

**Upjohn**

The Upjohn Company, Kalamazoo, Michigan

# Sterazolidin®

brand of prednisone-phenylbutazone

## a well balanced therapy in all forms of rheumatic disorder

The combined action of phenylbutazone and prednisone in Sterazolidin results in striking therapeutic benefit with only moderate dosage of both active agents.

In long-term therapy of the major forms of arthritis, control is generally maintained indefinitely with stable uniform dosage safely below that likely to produce significant hypercortisolism.

In short-term therapy of more acute conditions Sterazolidin provides intensive anti-inflammatory action to assure early resolution and recovery.

Sterazolidin®, brand of prednisone-phenylbutazone: Each capsule contains prednisone, 1.25 mg.; Butazolidin® (brand of phenylbutazone), 50 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate, 150 mg.; homatropine methylbromide, 1.25 mg. Bottles of 100.

Geigy, Ardsley, New York



# Geigy

## **Therapeutic vitamins in the "therapeutic" jar**

Any severe disease process undermines the nutritional integrity of tissue.<sup>1</sup> To counteract physiologic stress depletion of B and C vitamins, prescribe high potency STRESSCAPS... in burns... fractures... severe infection... surgery... and in chronic disorders such as arthritis, alcoholism or colitis.

The attractive STRESSCAPS jar also plays an important therapeutic role... reminding the patient of his daily dosage... assuring adequate intake for full metabolic support.

Each capsule contains:

Thiamine	
Mononitrate (B <sub>1</sub> )	10 mg.
Riboflavin (B <sub>2</sub> )	10 mg.
Niacinamide	100 mg.
Ascorbic Acid (C)	300 mg.
Pyridoxine HCl (B <sub>6</sub> )	2 mg.
Vitamin B <sub>12</sub>	4 mcgm.
Folic Acid	1.5 mg.
Calcium Pantothenate	20 mg.
Vitamin K (Menadione)	2 mg.

Average dose 1-2 capsules daily.

# **STRESSCAPS®**

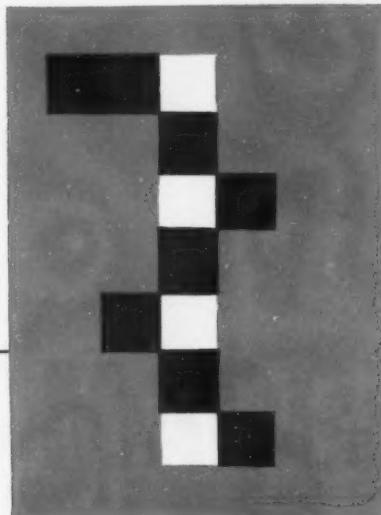
Stress Formula Vitamins *Lederle*



<sup>1</sup> Spies, T. D.: J. A. M. A.  
167:675 (June 7) 1958.



LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

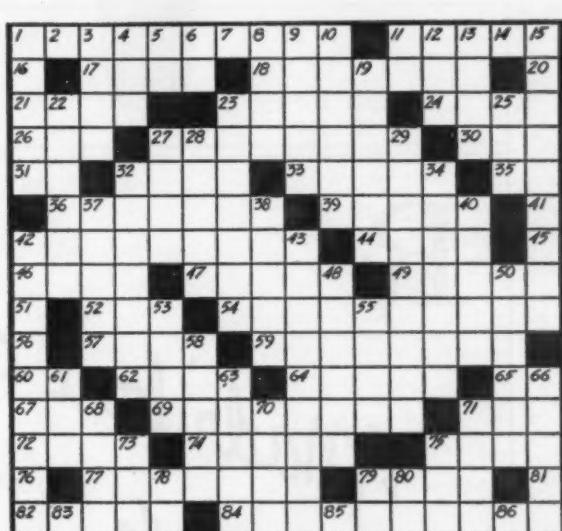


## Medical Teasers

*A challenging crossword puzzle for the physician  
(Solution on page 190a)*

### ACROSS

1. Render active again
11. Poppy derivative
16. Argon
17. Having digits of the foot
18. Having much hair (Lat.)
20. Article
21. Feeble
23. Toxic albuminoid from castor oil bean
24. Musical composition
26. Masculine pronoun
27. Easily convinced (Lat.)
30. Star nearest the Earth
31. Spanish article
32. Fat from sheep
33. Fathers
35. Xenon (Symb.)
36. Therapeutics
39. Love (Fr.)
41. Sulfur
42. Slits
44. Flat-nosed (Lat.)
45. Iodine
46. Contest for a prize (Gk.)
47. Medical corpsman (Colloq.)
49. —na, freedom from pain
51. Teaspoon
52. —rot, Luzon native
54. A cutting-off obliquely (of skin)
56. Roentgen
57. Woman's nickname
59. Science of serum diagnosis and treatment
60. Pertaining to
62. Scotch Anatomist (1851-1938)
64. Toxic albuminoid from the bark of the locust tree
65. Europium (Symb.)
67. Linear (Abbr.)
69. Ear-dust
71. —icle, pinna
72. Smell
74. Eaten away (Lat. nom.)
75. —al, auricular
76. Acceleration of gravity (Phys.)
77. Alarmed (Lat. nom. pl.)
79. Prefix meaning under
81. High mark
82. Fungus
84. Knives for cutting through costal cartilages



### DOWN

1. A seam
2. 250 (Rom. num.)
3. Small unit of an element
4. Heart
5. Tellurium (Symb.)
6. Pleasure and longing (Psych.)
7. Five
8. Sour
9. Childbirth
10. Woman's name
11. Mouth
12. The fluid product of suppuration
13. Equal (Gk.)
14. Uranium (Symb.)
15. Containing MgO
19. A plant (Lat.)
22. Lubricating
23. Withdrawn from practice
25. — Vomica, strychnine
27. Hints
28. Of things (Lat.)
29. Germinal (Lat.)
32. Part of wasp that hurts
34. —e, Half-tone
37. A local anesthetic
38. Mosquito that carries the yellow fever virus
40. Arrange again
42. The science of medicine
43. Iron deposit in the tissues (Path.)
48. A crown, as of the head
50. Person who gets sexual gratification from being a Peeping Tom
53. Oil (Comb. form)
55. —to, limited to a lobe
58. 1000 mls.
61. Divided (Suffix)
63. Designating a Greek style of architecture
66. Urine (Comb. form—pl.)
68. What the first initial of "N.B." stands for
70. Kind of Aromatic S.A. bark
71. Iota
73. Thing (Lat.)
75. Away from (Prefix)
78. Right (Abbr.)
79. Holmium (Symb.)
80. Yttrium (Symb.)
83. Erbium (Symb.)
85. Temperature
86. Electromotive force



**in  
bacterial  
infections**  
**the new alternative:**

R

Madribor 0.5gm  
#16  
Sig - Tab 10 stat  
three tab II  
once a day -

The low cost antibacterial prescription  
with assured safety and effectiveness

# MADRIBON

safe • effective • economical

"...its simplicity of administration, safety, clinical response and reasonable cost make... [Madribon] a desirable drug in instances where it is equally effective [as the antibiotics] and a choice drug in many antibiotic-resistant cases."<sup>1</sup>

Clinically effective for infections with cultures positive for:

*Staphylococcus aureus hemolyticus\**  
beta hemolytic streptococci  
pneumococci  
*K. pneumoniae*  
*H. influenzae*  
*Ps. aeruginosa\**

*B. proteus*  
*E. coli\**  
Proteus\*  
Shigella  
*Salmonella\**  
paracolon bacilli

## A new alternative in bacterial infections for many reasons —

- wide-spectrum activity
- high rate of clinical effectiveness — up to 90%
- less than 2 per cent side effects — even in long-term use
- minimal risk of hazardous superinfections
- essentially no danger of anaphylactic reactions
- fewer problems with the development of resistant mutants
- economical therapy
- reserves antibiotic effectiveness for fulminating, life-threatening infections

For complete information on dosage forms, dosage schedules and precautions, consult literature available on request.

\*Some infections due to antibiotic-resistant strains have responded to Madribon.



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Division of Hoffmann-La Roche Inc.  
Nutley 10, N. J.

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61. H. Pfanzl, *Medizinische*, (81/82), 1497, 1959.

MADRIBON® - 2,4-dimethoxy-6-sulfanilamido-1,3-diazine  
ROCHE®

FOR SIMULTANEOUS IMMUNIZATION  
AGAINST 4 DISEASES:  
Poliomyelitis-Diphtheria-Pertussis-Tetanus

PEDI-ANTICS



# TETRAVAX®

DIPHTHERIA AND TETANUS TOXOIDS WITH PERTUSSIS AND POLIOMYELITIS VACCINES

*now you can immunize against more diseases...with fewer injections*

*Dose: 1 cc.*

*Supplied: 9 cc. vials in clear plastic cartons. Package circular and material in vial can be examined without damaging carton. Expiration date is on vial for checking even if carton is discarded.*



TETRAVAX IS A TRADEMARK OF MERCK & CO., INC.

*For additional information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.*



**MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.**

# Butazolidin®

brand of phenylbutazone

## in arthritis and allied disorders

proved by a decade  
of experience

Ten years of experience in countless cases—more than 1700 published reports—have now established the leadership of Butazolidin among the potent non-hormonal antiarthritic agents.

Repeatedly it has been demonstrated that Butazolidin:

*Within 24 to 72 hours produces striking relief of pain.*

*Within 5 to 10 days affords a marked improvement in mobility and a significant subsidence of inflammation with reduction of swelling and absorption of effusion.*

Even when administered over months or years Butazolidin does not provoke tolerance nor produce signs of hormonal imbalance.

Butazolidin® (brand of phenylbutazone):  
Red-coated tablets of 100 mg.  
Butazolidin® Alka: Capsules containing  
Butazolidin® 100 mg.; dried aluminum  
hydroxide gel 100 mg.; magnesium trisilicate  
150 mg.; homatropine methylbromide 1.25 mg.

Geigy, Ardsley, New York



*too busy to give herself*  
the special care she needs



# NATALINS® COMPREHENSIVE

Vitamins and minerals, Mead Johnson

a prenatal supplement especially for the multipara†

tablets

#### Convenient one-tablet-a-day dosage

Circumstances often combine to increase the multipara's chances of diet deficiency. With children to care for, she uses more energy, yet may not take the time to replenish it by eating properly. In addition, her store of nutrients may have been depleted by previous pregnancies. The result, as one study\* of over 1,000 obstetrical patients has shown, is a greater tendency toward anemia among multiparas.

#### statistics show...

primigravidae	24 per cent anemic*
multiparas	36.8 per cent anemic*

Natalins Comprehensive tablets have been formulated to meet this need—by supplying generous amounts

of iron (40 mg. per tablet), ascorbic acid (100 mg. per tablet), calcium (250 mg. per tablet) and nine other significant vitamins and minerals. It naturally follows that this formulation will be more than adequate for the primigravida as well.

also available NATALENS® Basic tablets

Vitamins and minerals, Mead Johnson  
supplying four basic vitamins and minerals

\*Traylor, J. B., and Torpin, R.: Am. J. Obst. & Gynec. 61:71-74 (Jan.) 1951.

†Projected estimate from data of U.S. Office of Vital Statistics indicated that 3 out of 4 births in 1958 were to multiparas.



Mead Johnson  
*Symbol of service in medicine*

66960

# New Enzyme-controlled antifungal therapy to meet the growing challenge of Monilial Vaginitis

IN PREGNANCY / IN DIABETES / AFTER ANTIBIOTIC THERAPY—Today, monilial vaginitis is estimated to be a problem in at least 33 per cent of pregnant women and about 10 per cent of nonpregnant females<sup>1</sup>—a rapidly increasing incidence attributed partly to the widespread use of antibiotics.

"Vanay" Vaginal Cream broadens the scope of specific therapy: (1) "Vanay" insures a continuous therapeutic fungistatic effect without danger of local reaction; (2) in addition, "Vanay" restores and maintains a physiologic pH and normal vaginal flora—reducing risk of reinfection.

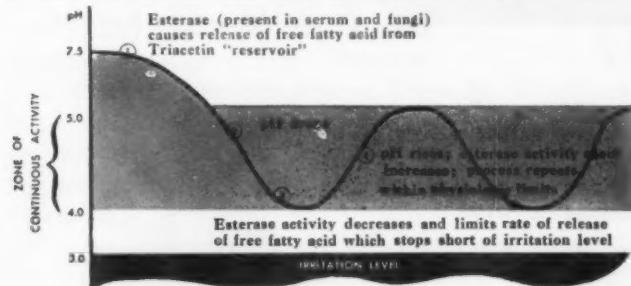
**Effective response:** Treatment was notably effective in moniliasis, as confirmed by symptomatic relief and post-treatment smears, Assali reports.<sup>2</sup> Marked clinical improvement was also noted in 154 of 206 patients, and in some cases symptoms subsided within a week of therapy.<sup>3</sup>

**Other advantages:** No monilial resistance demonstrated<sup>4</sup> / prolonged duration of activity<sup>4</sup> / nonsensitizing / nonirritating / nonstaining / odorless.

## "VANAY" Vaginal Cream

BRAND OF TRIACETIN IN NONLIQUEFYING BASE

UNIQUE ENZYME-CONTROLLED FUNGISTASIS WITHOUT IRRITATION<sup>5,6</sup>



AYERST LABORATORIES  
New York 16, N.Y. • Montreal, Canada  
5947



Patent Applications Pending

**Indications:** specific in monilial vaginitis...adjunctive in trichomoniasis...also valuable in non-specific vaginitis where an acid pH must be restored and maintained.

**Usual Dosage:** 2 to 4 grams daily.

**Supplied:** No. 204-250 mg. Glycerol triacetate per gram in a nonliquefying base. Combination package: 1½ oz. tube with 15 disposable applicators.

**References:** 1. Idson, B.: Drug & Cosmetic Industry 84:30 (Jan.) 1959. 2. Assali, N. S.; Personal communication. 3. Combined results of 18 clinical investigators, Medical Records, Ayerst Laboratories. 4. Kubista, R. A., and Derse, P. H.: Antibiotics & Chemotherapy, to be published. 5. Knight, S. G.: J. Invest. Dermat. 28:363 (May) 1957. 6. Knight, S. G.: Antibiotics & Chemotherapy 7:172 (Apr.) 1957.

## *In Coronary Insufficiency...*

Your high-strung angina patient often expends a "100-yd. dash" worth of cardiac reserve through needless excitement.



Curbs emotion as it boosts coronary blood supply

CONTROL OF EMOTIONAL EXERTION with Miltrate leaves him more freedom for physical activity.

IMPROVED CORONARY BLOOD SUPPLY with Miltrate increases his exercise tolerance.

# Miltrate\*

Miltown® (meprobamate) + PETN

Each tablet contains: 200 mg. Miltown and 10 mg. pentaerythritol tetranitrate.

Supplied: Bottles of 50 tablets.

Usual dosage: 1 or 2 tablets q.i.d. before meals and at bedtime. Dosage should be individualized.

 WALLACE LABORATORIES • New Brunswick, N. J.



CHL-9159-89 \*TRADE-MARK



## What's Your Verdict?

Edited by Ann Ledakowich, Member of the Bar of New Jersey

**A**t the time of death, the decedent's estate was valued at \$14,000. Two claims were filed against the estate.

The first was the claim of the decedent's physician for extensive medical services rendered during the last illness and totalling close to \$4,000. The other was that of Uncle Sam seeking payment for two years' unpaid income taxes, with penalties and interest added. This claim exceeded \$100,000.

Both claims were allowed by the executor of the estate as debts of the decedent. In a hearing on the executor's final report, the issue before the court was the priority in an insolvent estate of a physician's claim for services rendered during decedent's last illness, and the claim of the United States for unpaid taxes.

The court directed that, after administration costs were satisfied, the physician should be paid the reasonable value of his services. The remainder of the estate should then apply towards the claim of the United States. The court based its decision on the statutory law of the state providing that expenses of the last sickness shall have priority over debts due to the United States.

The United States appealed this decision. The executor paid the remaining funds in the estate into the registry of the court and closed the estate. The U. S. and the physician are the only litigants in the legal encounter on appeal.

The United States contends that the statute upon which the court made its decision conflicts with the federal law. Where state and

federal laws conflict, the federal law must prevail. The federal law provides that in an insolvent estate, the debts due the United States shall be first satisfied.

Counsel for the physician draws the attention of the court to cases involving insolvent estates in which the United States permitted, without objection, the expenses of the decedent's last illness to be listed as a claim prior in right to its own claim of unpaid taxes. It did not exact the pound of flesh merely because it is "so nominated in the bond," but made a concession in accordance with the dictates of wisdom and humanity.

How would you decide this appeal?  
*Answer on page 224a.*



**Time  
after  
time...  
in study  
after  
study**

# **CHLOROMYCETIN®**

**PROVES OUTSTANDINGLY EFFECTIVE AGAINST PROBLEM PATHOGENS**

**IN VITRO SENSITIVITY OF GRAM-POSITIVE COCCI FROM 5,600 CONSECUTIVE CULTURES  
TO CHLOROMYCETIN AND TO THREE OTHER BROAD-SPECTRUM ANTIBIOTICS\***

**76% CHLOROMYCETIN**

**65% ANTIBIOTIC A**

**64% ANTIBIOTIC B**

**58% ANTIBIOTIC C**

\*Adapted from Leming, B. H., Jr., & Flanigan, C., Jr., in Welch, H., & Marti-Ibáñez, F.: *Antibiotics Annual 1958-1959*, New York, Medical Encyclopedia, Inc., 1959, p. 414.

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in various forms, including Kapsseals® of 250 mg., in bottles of 16 and 100.

CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.



**PARKE, DAVIS & COMPANY • DETROIT 32, MICHIGAN**

08960

restore  
the  
depressed  
patient's  
ability  
to enjoy  
life



REMOVE DEPRESSION RAPIDLY, SIMPLY<sup>1-10</sup>

# Nardil

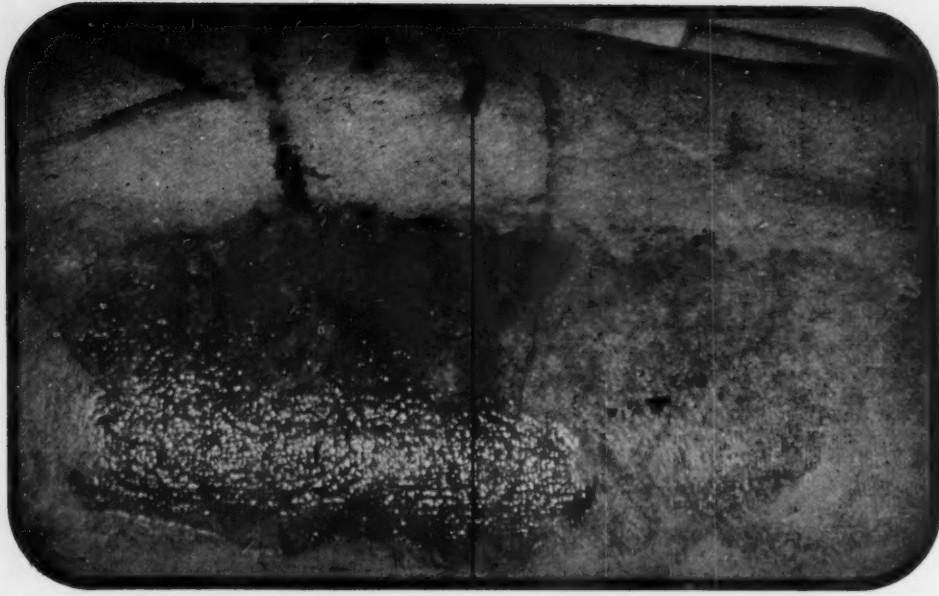
brand of phenelzine sulfate

No significant reports of toxicity to liver, kidneys or blood.<sup>1-10</sup> ■ Nardil corrects depression with simple tablet therapy in 4 out of 5 cases within 2 to 6 weeks; therapeutic action often within first few days.<sup>1-10</sup> ■ Prescribe Nardil when your patient is "down at the mouth," apathetic (with or without associated anxiety), afflicted with feelings of guilt, self-contempt and uselessness, appetite and sleep troubles, and/or vague or exaggerated physical complaints. ■ Nardil is also particularly effective in depressions associated with angina pectoris, rheumatoid arthritis and chronic disease generally, the menopause, and depressions of pregnancy and postpartum.

**References:** 1. Sainz, A.: *Ann. New York Acad. Sc.* 80:780, Art. 3 (Sept. 17) 1959. 2. Thal, N.: *Dis. Nerv. System* 20:197 (May, Pt. 1) 1959. 3. Saunders, J. C., Kline, N. S., et al.: *Am. J. Psychiat.* 116:71, 1959. 4. Arnow, L. E.: *Clinical Med.* 6:1573, 1959. 5. Dickel, H. A., et al.: *Clinical Med.* 6:1579, 1959. 6. Dunlop, E.: *Rhode Island M. J.* 42:656, 1959. 7. Sainz, A.: *Dis. Nerv. System* 20:537, 1959. 8. Sarwer-Foner, G. J., et al.: *Canad. M.A.J.* (in press) 1959. 9. Hobbs, L. F.: *Virginia Med. Monthly* 86: 692, 1959. 10. Dunlop, E.: *Dis. Nerv. System* (in press) 1960.



MORRIS PLAINS, N.J.



*Skin graft donor site after 2 weeks' treatment with...*

*petrolatum gauze—still  
largely granulation tissue*

*FURACIN gauze—  
completely epithelialized*

## **OBJECTIVE EVIDENCE OF SUPERIOR WOUND HEALING**

was obtained in a quantitative study of 50 donor sites, each dressed half with FURACIN gauze, half with petrolatum gauze. Use of antibacterial FURACIN Soluble Dressing, with its water-soluble base, resulted in more rapid and complete epithelialization. No tissue maceration occurred in FURACIN-treated areas. There was no sensitization.

Jeffords, J. V., and Hagerty, R. F.: Ann. Surg. 145:169, 1957.

**FURACIN®**, . . . brand of nitrofurazone  
the broad-range bactericide that is *gentle to tissues*

**spread** FURACIN Soluble Dressing: FURACIN 0.2% in water-soluble ointment-like base of polyethylene glycols.

**sprinkle** FURACIN Soluble Powder: FURACIN 0.2% in powder base of water-soluble polyethylene glycols. Shaker-top vial.

**spray** FURACIN Solution: FURACIN 0.2% in liquid vehicle of polyethylene glycols 65%, wetting agent 0.3% and water.

**EATON LABORATORIES, NORWICH, N.Y.**

*Nitrofurans—a NEW class of antimicrobials—neither antibiotics nor sulfonamides*





**when emotional turbulence threatens  
medical or surgical care**

Fear, agitation, and resistance often hinder medical diagnosis and treatment.

SPARINE alleviates agitation, overcomes resistance, placates fears.

In addition to calming the patient, SPARINE controls other interfering symptoms: nausea, vomiting, and hiccups.

*Wyeth Laboratories, Philadelphia 1, Pa.*

**Sparine®**

**HYDROCHLORIDE**

**Promazine Hydrochloride, Wyeth**

**INJECTION**

**TABLETS**

**SYRUP**



**A Century of Service to Medicine**

# new Lanesta Gel

speedier spermicidal action

Spermicidal Time of Six Leading Contraceptive  
Jellies in Minutes<sup>1</sup>

Cytometer Chamber Spermatocidal Test

31.9

Lanesta

90.0 B

104.0 C

110.6 D

174.0 E

259.1 F

Mean Spermatocidal Time  $\pm$  S. E., Min.

Berberian, D. A., and Slighter, R. G.: J.A.M.A. 168:2257 (Dec. 27) 1958.

4 active agents provide speed and efficacy...

- 7-chloro-4-indanol, the new spermicide, rapidly and completely immobilizes sperm in concentrations as low as 1:4,000—yet is so mild that it may be used even in the presence of vaginal infection.
- 10% NaCl in ionic strength greatly accelerates spermicidal action.
- sodium lauryl sulfate acts as a dispersing agent and spermicidal detergent.
- ricinoleic acid acts as a sperm inactivator and immobilizer.

Lanesta Gel® with diaphragm provides the most effective means of conception control. However, if a patient is unwilling or unable to use a diaphragm, Lanesta Gel provides faster spermicidal action—plus desirable occlusion at the cervical os when used alone.

*Supplied:* Lanesta Exquiset (Physician's Prescription Package), 3 oz. tubes with applicator; 3 oz. refills. Available at all pharmacies.

*References:* 1. Berberian, D. A., and Slighter, R. G.: J.A.M.A. 168:2257 (Dec. 27) 1958. 2. Bailey, J. H.; Coulston, F., and Berberian, D. A.: J. Am. Pharm. A. (Sc. Ed.) 48:212 (April) 1959. 3. Gamble, C. J.: Am. Pract. & Digest Treat. 9:1818 (Nov.) 1958. 4. Berberian, D. A.; Coulston, F., and Slighter, R. G.: Toxicol. & Appl. Pharmacol. 1:366 (July) 1959. 5. Warner, M. P.: J. Am. M. Women's A. 14:412 (May) 1959.

Distributed by GEORGE A. BREON & CO., New York 18, N. Y.      P.S.      Manufactured by Esta Medical Laboratories, Inc., Alliance, Ohio      Lansteen® is also available.

# ANOTHER NOTCH FOR AMPLUS<sup>®</sup> IMPROVED

(D-AMPHETAMINE + ATARAX® + VITAMINS AND MINERALS)

## (AND SHE'S LOSING NOTHING BUT WEIGHT)

- She's *not* losing her ambition to reduce. (Thanks to d-amphetamine's proven anorectic action.)
- She's *not* losing her composure. (The tranquilizer, Atarax, calms diet-induced anxiety and jitters.)
- She's *not* losing essential vitamins and minerals. (AMPLUS IMPROVED supplies them.)

## MAKE THE ONE FOR GOOD MEASURE AMPLUS IMPROVED

One capsule half-hour before each meal. Bottles of 100 soft, soluble capsules, this actual size.  Prescription only.



New York 17, N. Y.  
Division, Chas. Pfizer & Co., Inc.  
Science for the World's Well-Being

You see an improvement within a few days. Thanks to your prompt treatment and the quick, smooth action of Deprol, her depression is relieved and her anxiety and tension calmed — often in a few days. She eats well, sleeps well and soon returns to her normal activities.

## Lifts depression... as it calms anxiety!

**Smooth, balanced action lifts depression as it calms anxiety... swiftly and safely**

**Balances the mood — no "seesaw" effect of amphetamine-barbiturates and energizers.** While amphetamines and energizers may stimulate the patient — they often aggravate anxiety and tension. And although amphetamine-barbiturate combinations may counteract excessive stimulation — they often deepen depression.

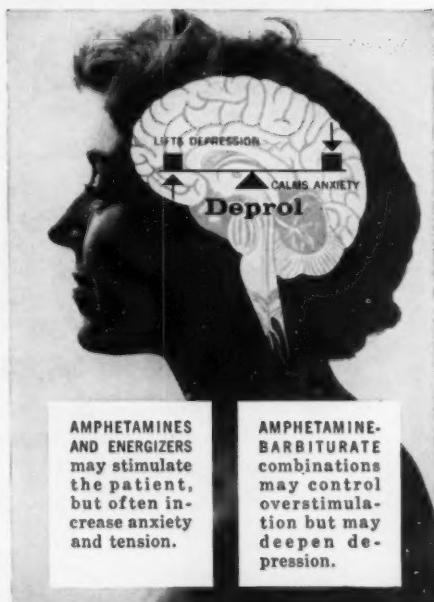
In contrast to such "seesaw" effects, Deprol lifts depression as it calms anxiety — both at the same time.

**Acts swiftly — the patient often feels better within a few days.** Unlike the delayed action of other drugs which may take two to six weeks to bring results, Deprol's smooth, immediate action relieves the patient quickly — often within a few days.

**Acts safely — no danger of liver damage.** Deprol doesn't produce liver damage, hypotension, psychotic reactions or changes in sexual function — frequently reported with other drugs.

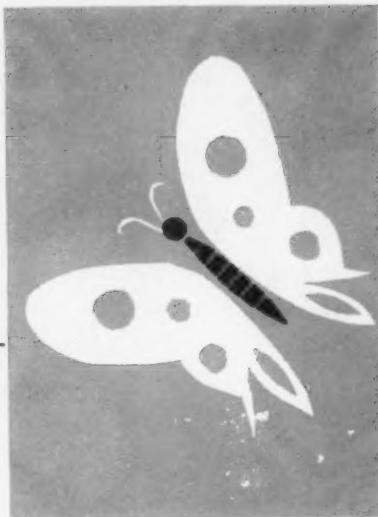
# ▲Deprol▲®

**Dosage:** Usual starting dose is 1 tablet q.i.d. When necessary, this may be gradually increased up to 3 tablets q.i.d. Composition: 1 mg. 2-diethylaminoethyl benzoilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate. Supplied: Bottles of 50 light-pink, scored tablets. Write for literature and samples.



 **WALLACE LABORATORIES**  
New Brunswick, N. J.

CD-1149



## AFTER HOURS

Photographs with brief description of your hobby will be welcomed. A conversation-piece desk ornament . . . an imported, wooden (handcarved) physician figurine . . . will be sent for each accepted contribution.

**D**r. J. N. Carroll of New York City combines two hobbies — gardening and photography. "They go hand in hand," says the doctor. "Beautiful flowers make wonderful subjects either in color or black and white. With color slides you can hardly go wrong, but in black and white you have to be more creative."

In black and white photography, according to Dr. Carroll, you should photograph the flower so as to emphasize its form. "The shot of the white lily is a good example. This flower has a very interesting and beautiful form, which I managed to bring out by proper lighting. I took the picture near dusk so as to get somewhat of a dark background. Then I used side-lighting, employing a single flash bulb a few feet from the flower and to the left."

If you have a garden and wish to get even more pleasure from it, Dr. Carroll's advice is to start photographing some of your prize plants. "And if you're a photographer and in need of interesting subject matter, just take a walk around your garden. You'll see a great many things of photographic interest."



The flower was lighted from the side to emphasize its form.



decisive therapy in a delicate matter

**new**  
**Triburon®**  
brand of trichloroisonium chloride CHLORIDE  
*Vaginal Cream*  
wide-spectrum microbicide  
antitrichomonal • antibacterial • antimonilial

provides potent microbicidal action in vaginal infections,  
including trichomoniasis, moniliasis and nonspecific vaginitis

**Effective**—Cured or markedly improved—within 2-3 weeks—86 per cent of 250 patients with various types of vaginal infections.<sup>1,2</sup>

**Broad spectrum**—Pathogens included *Trichomonas vaginalis*, *Candida albicans* and *Hemophilus vaginalis*, as well as other gram-negative and gram-positive organisms.<sup>1,2</sup>

**Safe**—Closed-patch skin tests proved Triburon Chloride, the active ingredient of Triburon Vaginal Cream, "... to be nonirritating . . . not sensitizing . . .".<sup>3</sup>

Nonstaining, odorless Triburon Vaginal Cream is also suited for use during pregnancy, menstruation, for senile vaginitis with conjunctive therapy, for preoperative, postoperative and postpartum prophylaxis, after cauterization, conization, irradiation.

**Composition:** Triburon Vaginal Cream contains 0.1% concentration of Triburon in a white, hydrophilic cream base.

**Dosage:** One applicatorful of Triburon Vaginal Cream should be introduced into the vagina every night for 2 weeks. If necessary, the course of therapy may be repeated.

**Caution:** Triburon is virtually nonsensitizing and non-irritating but if evidence of sensitization occurs, use of the cream should be discontinued.

**Supplied:** 3-ounce tubes with 18 disposable applicators.

**References:** 1. J. J. McDonough and N. Mulla, to be published. 2. Reports on file, Roche Laboratories. 3. R. C. V. Robinson and L. E. Harmon, *Antibiotics Annual 1958-1959*, New York, Medical Encyclopedia, Inc., 1959.

ROCHE LABORATORIES



Division of Hoffmann-La Roche Inc • Nutley 10 • N. J.



treats  
seborrheic  
dermatitis  
as an  
infectious  
process  
as well as  
a cosmetic  
problem

Active ingredient: Povidine Iodine™

# BETADINE™ SHAMPOO

Established in 1802  
TAYLBY-NASON COMPANY, INC.  
DOVER, DELAWARE



THE SEBORRHEIC STATE IS ALWAYS FOUND ASSOCIATED WITH BACTERIAL AND YEAST INFECTION. A TRUE ANTIANDRUFF PREPARATION MUST BE CAPABLE OF DESTROYING THESE MICROORGANISMS.

- kills pathogens on contact
- effective adjunctive therapy in severe pyoderma\*
- safe, nontoxic, nonirritating, nonsensitizing
- rich golden lather, pleasantly scented, leaves hair easy-to-manage

\* Spoor, H., Proc. Scient. Sec. TGA No. 31, May 1959  
Frank, L., New York J. Med. 59(289), 1959

**allergen on rye**

when that delectable snack boomerangs

**BENADRYL®**

antihistaminic-antispasmodic

**gives prompt, comprehensive relief**

In food sensitivity, BENADRYL provides simultaneous, dual control of allergic symptoms. Gastrointestinal spasm, plus the cutaneous and respiratory symptoms associated with food allergy are favorably affected by the *antihistaminic action* of BENADRYL. Concurrently, its *antispasmodic effect* alleviates colicky pain, nausea and vomiting. This duality of action makes BENADRYL equally valuable throughout the entire spectrum of allergic disorders.

BENADRYL Hydrochloride (diphenhydramine hydrochloride, Parke-Davis) is available in a variety of forms including: Kapseals®, 50 mg. each; Kapseals, 50 mg., with ephedrine sulfate, 25 mg.; Capsules, 25 mg. each; Elixir, 10 mg. per 4 cc.; and for delayed action, Emplets®, 50 mg. each. For parenteral therapy, BENADRYL Hydrochloride Steri-Vials®, 10 mg. per cc.; and Ampoules, 50 mg. per cc.



**PARKE, DAVIS & COMPANY**  
**DETROIT 32, MICHIGAN**

REED





# Triple Sulfa Cream

TRADEMARK

- in mixed vaginal infections
- against secondary invaders  
in trichomoniasis
- in postpartum care
- after vaginal surgery





## Who Is This Doctor?

Identify the famous physician from clues in this brief biography

**B**orn in Schweisen, Germany, on July 29, 1840, he is said to be a descendant of the biblical editor of the prophecies of Jeremiah.

He emigrated to the U.S. at 15 to avoid conscription into the Prussian Army, settling in Camden, South Carolina. He attended South Carolina Medical College in Charleston and Medical College of Virginia in Richmond. After graduation from medical school, the Civil War in progress, he joined the Third Battalion, South Carolina Infantry, on April 4, 1862, as an Assistant Surgeon.

He was captured twice, at Antietam and Gettysburg, and was imprisoned at Fort McHenry at the war's end. On Nov. 27, 1867, he married Isabel Wolfe. They had three sons. The family moved to New York in 1881.

He became the first Professor of Hydrotherapy in this country, receiving the appointment at Columbia University. In 1892 he wrote "The Uses of Water in Modern Medicine" and in 1898: "The Principles and Practice of Hydrotherapy." He introduced the Brand treatment of typhoid fever by full baths.

In 1888 he insisted on operation in a case of appendicitis, said to be the first performed in this country. He sponsored free public baths as Chairman of the Committee on Hygiene of the New York County Medical Society and his crusade led to the opening of the Rivington Street baths in 1901, the first of their kind. About 100 public baths were soon opened throughout the country.

His son Herman, also a physician, became a successful Wall Street financier, and American Ambassador to Portugal and Holland. His son Bernard, at 88, millionaire Wall Street financier, philanthropist and benefactor of hospitals and varied charities, is an almost legendary unsalaried statesman and advisor to presidents.

He died on June 3, 1921. Can you name the doctor? *Answer on page 224a.*

WHEN EVERYTHING  
IS OFF SCHEDULE—  
INCLUDING HIS STOMACH

# BUTIBEL®

*antispasmodic-sedative*

puts the "jumpy," nervous g.i. tract back on schedule—  
with its regulative antispasmodic-sedative action.

BUTIBEL brings relief through the non-cumulative sedation of 15 mg. BUTISOL Sodium® butabarbital sodium combined with the antispasmodic action of natural extract of belladonna 15 mg. (per tablet or 5 cc.)—each ingredient having approximately the same duration of action.

**BUTIBEL** Tablets • Elixir • Prestabs® **Butibel R-A**  
(Repeat Action Tablets)

**McNEIL**

McNeil Laboratories, Inc. • Philadelphia 32, Pa.

In vitro facts and in vivo findings on new broad-spectrum  
**DECLOMYCIN**

PROPERTIES

PERFORMANCE

IMPORTANCE

A MAJOR CONTRIBUTION TO ANTI-INFECTIVE THERAPY

## PROPERTIES:

**G**reater inhibitory action  
...lower daily intake than  
other tetracyclines

A unique new fermentation product of *Streptomyces aureofaciens*, DECLOMYCIN Demethylchlortetracycline achieves notably greater antibiotic activity against infections<sup>2,4,7,8,10,14,19,20,24</sup> because of two basic factors: (1) inherent potency, and (2) greater stability in most body fluids.<sup>15,17,18,27</sup> Actual clinical activity has, in many instances, been better than expected on the basis of *in vitro* sensitivity tests.<sup>14,18,19</sup>

**B**road-spectrum control  
...with far less antibiotic

Activity levels of DECLOMYCIN Demethylchlortetracycline are higher than those of previous broad-spectrum antibiotics. Hardier strains of various organisms appear to be somewhat more responsive.<sup>4</sup> Apparently some strains of *Pseudomonas*, *Proteus* and *A. aerogenes*, frequently refractory to therapy, are sensitive to DECLOMYCIN.<sup>7,23,25,26</sup>

**D**ECL

# Sustained peak activity ... greater security of control

Prolonged retention and compatibility of DECLOMYCIN with body fluids provides peak activity between doses.<sup>15,17,18,27</sup> Inhibition of bacteria is more constant.

# 24-48 hours extra activity... protection against relapse

DECLOMYCIN maintains effective antimicrobial action for one to two days after stopping dosage.<sup>7,14</sup> Resurgence of a few viable pathogens, with relapse...and low patient defense against secondary bacterial invasion during the first post-therapy days...are largely offset.



# PERFORMANCE

## Susceptibility Tests

Roberts, M. S., et al.<sup>20</sup>  
New York, N. Y.

## Tolerance & Toxicity

Boger, W. P., and Gavin, J. J.<sup>21</sup>  
Norristown, Pa.

## Gonococcal Infection

Marmell, M., and Prigot, A.<sup>22</sup>  
New York, N. Y.

## General Medicine

Lichter, E. A., and Sobel, S.<sup>23</sup>  
Chicago, Ill.

## Respiratory Infection

Perry, D. M., et al.<sup>24</sup>  
Seattle, Wash.

## Various Infections

Finland, M., et al.<sup>25</sup>  
Boston, Mass.

## Pyelonephritis

Vineyard, J. P., et al.<sup>26</sup>  
Dallas, Tex.

## Soft Tissue Infection

Prigot, A., et al.<sup>27</sup>  
New York, N. Y.

Pre-treatment sensitivity tests in 75 genitourinary patients showed DECLOMYCIN Demethylchlortetracycline to be superior against the large majority of organisms and in no instance inferior to tetracycline. DECLOMYCIN apparently has more effective coverage... several strains of *Proteus* and *A. aerogenes* responded.

Administration of the recommended 600 mg. (4 capsules) daily for 30 days to a small group of elderly patients revealed no hematologic, hepatic and urinary alteration or other abnormal finding. No clinical side effects were observed.

All except two of 63 patients with acute gonorrhea responded promptly to therapy with DECLOMYCIN. Fifteen received 250 mg. q.i.d. for one day, the remainder received 600 or 750 mg. in divided doses over one or two days. No side effects.

One hundred and sixty-nine patients with various infections showed generally equivalent response to four dosage regimens, including the recommended level. Of 29 pneumococcal pneumonias, all recovered with 15 afebrile in 48 hours or less — except a few patients with preterminal underlying disease. All 42 scarlet fever patients recovered with 32 afebrile in 48 hours or less. Other patients also responded satisfactorily with few exceptions. No blood, liver or kidney toxicity found. G.I. side effects occurred in only 2 per cent at the recommended dosage, or less, and were easily reversible.

Good or fair response in 24 of 30 cases of acute bacterial pneumonia, and in all of six cases of acute bronchitis. Side effects occurred at higher dosage but were uniformly absent when dosage was limited to 600 mg. per day.

Eighty patients with various infections were treated with DECLOMYCIN Demethylchlortetracycline and an equal number with tetracycline. Therapeutic response was indistinguishable between the two groups. However, DECLOMYCIN Demethylchlortetracycline dosage was much lower (50 to 60 per cent of that of tetracycline.) In addition, incidence of side effects with demethylchlortetracycline was only half that experienced with tetracycline.

Therapy with DECLOMYCIN was successful in 12 of 13 patients with pyelonephritis. Sterile cultures were obtained in nine patients within six to 14 days. Among the organisms suppressed were strains of *A. aerogenes*, *E. coli* and paracolon bacillus. In most cases, DECLOMYCIN was used jointly with another antibiotic.

DECLOMYCIN was used alone or auxiliary to surgical measures in 150 cases of acute soft tissue infection, mostly ambulatory. Full resolution of infection was achieved in all cases, average length of treatment being six days. Dosage was 600 or 750 mg. daily. Side effects consisted of transitory G.I. disturbances in three cases.

# DECLO

# PERFORMANCE

## Urinary Infection

Trafton, H. M., and Lind, H. E.<sup>28</sup>  
Brookline, Mass.

Clinical response was favorable in a majority of 50 cases of urinary tract infections with relief of symptoms, elimination, or marked reduction, of pyuria and with urine sterilization in some. DECLOMYCIN Demethylchlortetracycline was administered in one-half to one-third the daily milligram level of related antibiotics, for 8 days.

No significant diarrhea occurred in any case although mild nausea and upper G.I. symptoms were fairly common. Phototoxicity occurred in six cases.

In 570 treated for a great variety of infections, DECLOMYCIN was successful in resolving infection or in effecting marked improvement in 81 per cent, after failure of other antibiotics.

## Antibiotic-Resistant Infections

Compilation of reports of  
210 clinical investigators.<sup>29</sup>

## Pediatric Infection

Fujii, R., et al.<sup>30</sup>  
Tokyo, Japan

Therapeutic results, elicited in 309 pediatric patients with average daily dosage of 15 mg./kg., were equal to those produced by 30 mg./kg. of buffered tetracycline preparations. Satisfactory results were obtained in 75 per cent. No appreciable side effects when 15 mg./kg./day dosage was not exceeded.

All eight cases of ophthalmic, respiratory or otic infection responded to four to twelve days of DECLOMYCIN therapy (5 recovered, 2 greatly improved, 1 improved). One skin reaction, in a case receiving the higher trial dosage of 7 mg./lb. daily, occurred.

Results were satisfactory in all 32 cases of acute bacterial pneumonia, excepting for two caused by non-susceptible organisms. Over half had been complicated by pleural, suppurative, bronchial, or underlying structural lung problems. Dosage was low. No toxicity found. Acceptance and toleration were excellent.

Six cases of g.i. infection (diverticulitis, ileitis, colitis) responded in three to eight days on the lower milligram intake... even after failure in most with sulfa, neomycin or penicillin-streptomycin. Complete recovery was gained in 5 respiratory cases on a shorter schedule; another withdrew with occurrence of thrush. No other side effects were reported.

All 13 upper or lower respiratory infections demonstrated very good response in 2-3 days on recommended dosage. No side effects were reported.

Of 1,904 patients with adequate follow-up treated for a wide diversity of infections, 87 per cent were reported as cured or improved. Most patients received one 150 mg. tablet every 6 hours. Therapy usually was for three to eight days. Side effects, mostly referable to the gastrointestinal tract, occurred in 200 patients.

## Respiratory Infection

Feingold, B. F.<sup>31</sup>  
San Francisco, Cal.

## Various Infections

Compilation of reports of  
210 clinical investigators.<sup>29</sup>



# PERFORMANCE (continued)

## Respiratory Infection & Others

Gates, G. E.<sup>21</sup>  
South Bend, Ind.

## Pustular Dermatoses

Kanof, N. B., and Blau, S.<sup>16</sup>  
New York, N. Y.

## Surgical Infection

Floyd, R. D., and Anlyan, W. G.<sup>9</sup>  
Durham, N. C.

## Wound Infections & Others

Meyer, B. S.<sup>21</sup>  
Birmingham, Ala.

## Topical & Wound Infections

Stewart, J.<sup>26</sup>  
New Orleans, La.

## Oral Infection

Arbour, E. F.<sup>1</sup>  
New Orleans, La.

## Brucellosis

Chávez, Max, G.<sup>3</sup>  
Mexico, D. F.

Of 65 cases, predominantly respiratory infections, but including some of cystitis and cellulitis, 50 had a good response, 12 were fair and three were failures. One of the failures was a case of chronic ulcerative colitis and two were respiratory infections. The only complication was a slight vulvar pruritus and burning tongue occurring near the end of a week's treatment of residual pneumonitis.

Eighty-five per cent of 67 patients responded with excellent or good results on a DECLOMYCIN schedule of one 150 mg. capsule q.i.d. for two to twelve weeks. Three poor responses were related to highly resistant organisms. No pruritus or drug eruptions developed. Only four cases showed nausea or diarrhea in the long therapeutic course.

Successful results were generally obtained in 60 patients given 600 mg. DECLOMYCIN daily (or slightly less) for five to 15 days. No infection developed in the clean or contaminated prophylaxis group. Most frank infections responded...including several refractory to previous antibiotics. No toxicity evidenced. Intestinal toleration was excellent.

Thirty-five cases, chiefly prophylactic, and some traumatic-surgical wound infections were treated usually on one capsule DECLOMYCIN q. 6 h. for two to eight days. Over 80 per cent responded, including one with *Pseudomonas* etiology. Minor itching or nausea occurred in two; prominent nausea developed in one on a q. 4 h. schedule.

Of 21 patients followed, 15 completely recovered, four improved in four to 42 days on 600 mg. daily. Seven had not responded to various other therapies. One had *A. aerogenes* predominance, complicated by *Proteus* and *E. coli*. Cases were traumatic-surgical-topical infections with some respiratory. One questionable reaction of anemia was encountered.

Of four patients treated, three responded to one capsule DECLOMYCIN q. 6 h. for three days. No change in one case of chronic proliferating periodontitis. No adverse reactions seen.

All nine patients infected with *Brucella melitensis* were afebrile on fourth or fifth day of DECLOMYCIN therapy and asymptomatic within 15 days. Treatment lasted for 45 days. No relapses occurred. Hepatic, renal, or hematologic toxicity was not seen. Minor or occasional intestinal reactions in some cases did not require discontinuance.

# DECLO

# IMPORTANCE...

**in the average patient**—DECLOMYCIN reduces the possibility of gastrointestinal intolerance and increases the likelihood of an uneventful therapeutic course. Variants of an infecting organism are less likely to survive the high, sustained activity and post-dosage control. Minor or major reverses or "setbacks" during therapy may be avoided. Susceptibility to secondary infection when dosage is terminated is counteracted by the "extra-day" activity.

**in mixed infections**—DECLOMYCIN provides satisfactory control of conditions involving multiple pathogens. Since organisms vary in sensitivity at given antibiotic levels, the higher DECLOMYCIN activity tends to inhibit a greater proportion of the less susceptible strains. Remission and bacteriologic cure can thus progress at a faster pace.

**in the absorption-deficient**—The high activity/intake ratio of DECLOMYCIN provides a wider margin of security for those with disturbed or abnormal absorption or with underlying gastrointestinal dysfunction. Inhibitory levels remain more than adequate in most.

**under adverse host conditions**—In debility, malnutrition, neoplasm, diabetes, or other organic, chronic or underlying disease, DECLOMYCIN may be vital to successful resolution of infection. *Generally in geriatrics*, for the same reason, DECLOMYCIN should often be a broad-spectrum of choice.

**if an occasional dose is missed**—The sustained action of DECLOMYCIN protects against possible loss of control. In the sleeping patient, an occasional dose may be foregone without adverse effect, while benefits of such rest are gained. Arbitrary rejection of a dose by pediatric or geriatric patients...simple forgetfulness...or postponing a dose will not appreciably reduce antibiotic activity provided these do not occur frequently.



IMPORTANCE

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Demethylchlortetracycline Lederle

## a masterpiece of antibiotic design

**CAPSULES**, 150 mg., bottles of 16 and 100. **Dosage:** Average adult 1 capsule four times daily.

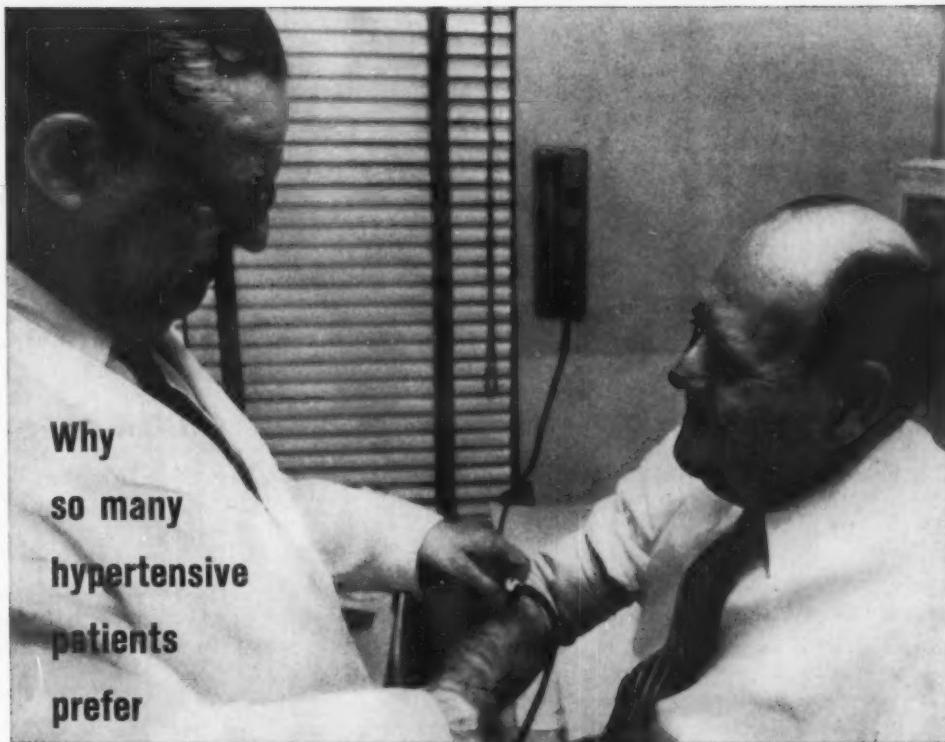
**PEDIATRIC DROPS**, 60 mg./cc. (custard flavor) in 10 cc. bottle with calibrated dropper. **Dosage:** 1-2 drops (3-6 mg.) per pound body weight per day—divided into 4 doses.

**ORAL SUSPENSION**, 75 mg./5 cc. teaspoonful (custard flavor) in 2 oz. bottle. **Dosage:** 3-6 mg./lb./day—divided in 4 doses.

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\*Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J. C.: J.A.M.A. 169:1609 (April 4) 1959.

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**Analexin**, Irwin, Neisler & Co., Decatur, Illinois. Indicated as a general analgesic and muscle relaxant. Effective in a wide variety of painful conditions including dysmenorrhea, abdominal and epigastric distress, genitourinary conditions, tension headache, gout, low back pain, myalgia, etc. *Dose:* Usual dose, 1 or 2 tablets every four hours, or as directed by physician. *Sup:* Bottles of 100 tablets.

**Anti-M and Anti-N Lectin**, Hyland Laboratories, Los Angeles, California. Blood typing reagents. Purified extracts which are water-clear and stable, producing rapid, clear-cut, specific agglutination of blood specimens. Important in cases of disputed paternity, and useful in research which deals with transfusion reactions and isosensitizations. *Sup:* Dropper vials of 2 cc.

**Aristocort Diacetate Syrup**, Lederle Laboratories Division, American Cyanamid Co., Pearl River, New York. New cherry-flavored dosage form, each teaspoonful of which contains

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**Atarax Parenteral 50 mg.**, J. B. Roerig & Company, Division Chas. Pfizer & Co., Inc., New York, New York. New, higher potency dosage form, containing 50 mg. per cc. of hydroxyzine hydrochloride. Indicated for the treatment of acutely disturbed or hysterical patients, various psychoses, acute or chronic alcoholism with anxiety, alcoholic withdrawal symptoms or delirium tremens and in any case not amenable to oral medication. *Dose:* By deep intramuscular injection or intravenously. Given intravenously, it is injected slowly, 1 cc. per minute. *Sup:* Ceramic printed ampuls of 2 cc.

**Banadex**, Lederle Laboratories Division, American Cyanamid Co., Pearl River, New York. Pink, sugar-coated tablets, each containing 400 mg. meprobamate and 5 mg. dextro-amphetamine sulfate. Indicated for the control of appetite. Helps relieve the physical and emotional tensions of the patient who is forced to diet, while elevating his mood, thus establishing a more favorable attitude toward the required regimen. *Dose:* 1 tablet one-half to one hour before each meal. *Sup:* Bottles of 100 and 1000.

*Continued on page 82a*

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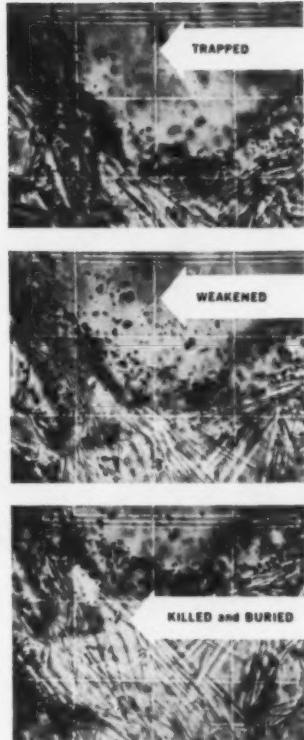
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- within  $\frac{1}{4}$  second  
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1. Goldstein, L. Z.: Obst. & Gynec. 10:133 (Aug.) 1957.  
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### **PARKINSONISM**

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**Cytoxan**, Mead Johnson & Company, Evansville, Indiana. Chemotherapeutic agent that has shown useful qualities in palliative treatment of certain types of cancer; e.g., Hodgkin's disease, the lymphomas, leukemias, and mycosis fungoides. *Dose:* Dosage must be individualized. Clinical effectiveness of the drug may be measured in three ways: Reduction in size of the tumor; hematologic response; symptomatic or toxicologic response. *Sup:* Injectable form in vials of 100 and 200 mg., with sodium chloride. In tablet form (50 mg.) in bottles of 100. The white tablets are blue-flecked for easy identification.

**Depinor**, Armour Pharm. Co., Kankakee, Illinois. Lyophilized form of cyanocobalamin zinc tannate equivalent to 2500 mcg. vitamin B<sub>12</sub>. Vial of diluent contains 5 cc. sodium chloride solution for injection. When reconstituted, each ml. contains 500 mcg. vitamin B<sub>12</sub>. Indicated for use in various types of macrocytic anemias or other conditions requiring vitamin B<sub>12</sub> therapy. *Dose:* Average

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**Eskatrol**, Smith Kline & French Laboratories, Philadelphia, Pennsylvania. Spansule capsules, each containing 15 mg. dextro amphetamine sulfate and 7.5 prochlorperazine. Indicated for problem overweight patients, to control the appetite and relieve the emotional problems which often contribute to overeating. *Dose:* One spansule capsule every morning. *Sup:* Bottles of 30 and 250.

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*Concluded on page 88a*

**announcing a new class of drug**    *the first analgomylaxant*



# analexin<sup>TM</sup>

*a single chemical that is both a general non-narcotic  
analgesic and an effective muscle relaxant*

phenylramidol HCl

# **analexin**

## **• where pain makes tension and tension makes pain analexin stops both effectively**

Analexin is a new synthetic chemical<sup>1</sup> that inherently possesses within one molecular structure two different pharmacologic actions: (1) analgesia by raising the pain threshold and (2) muscle relaxation by selectively depressing subcortical and polysynaptic transmission (interneuronal blockade), abolishing abnormal muscle tone without impairing normal neuromuscular function.<sup>2</sup>

The analgesic potency of one tablet is clinically equivalent to that of 1 grain of codeine; however, phenyramidol is non-narcotic nor is it narcotic related. It is not habituating. No evidence of tolerance or cumulative effects. Muscle relaxant effect is comparable to the most potent oral muscle relaxants available.

## **• relieves the total pain experience . . .**

Pain, regardless of origin, is often paralleled by muscle tension, which may play a significant role in exacerbating the total pain experience. Employment of phenyramidol, a single agent with two distinct but simultaneous physiologic actions, has obvious advantages; for it can relieve the total pain experience more effectively as it acts on pain centers and muscle to produce analgesia and muscle relaxation.

## **• with remarkably few side effects**

Analexin does not produce such centrally induced side effects as sedation, euphoria, etc., occasionally observed with analgesic agents or interneuronal blocking agents. The infrequent occurrence of mild gastrointestinal irritation, or epigastric distress, pruritus with and without rash, has been noted. However, these effects subside promptly when dosage is reduced or discontinued.<sup>3</sup>

**Clinical Results with Analexin in Painful Conditions**

investigator	type of pain treated	no. of cases	results or comment
Batterman, Grossman & Mouratoff <sup>3</sup>	musculoskeletal pain	118	
	ambulatory patients with other than muscu- loskeletal pain	43	"Not only is satisfactory relief of painful states achieved in the majority of patients regardless of etiology and duration of pain, but there is also no evidence sug- gestive of cumulative toxicity. Further- more, in contrast to codeine and meperi- dine, the likelihood of untoward reactions occurring in ambulant patients is not high."
	hospitalized patients with pain secondary to medical or surgical conditions	34	
Wainer <sup>4</sup>	dysmenorrhea	50	Excellent or good results in 45 out of 50 cases; poor results in 5 cases in 4 of which subsequently pathology was found.
	premenstrual tension and headache	50	In 50 cases—40 received excellent relief. Of the remaining 10—five were subse- quently demonstrated as migraine. In the remaining 5—there were poor results.
	postpartum pain	100	phenyramidol with aluminum aspirin (Analexin-AF) successfully replaced aspir- in and codeine in these 100 cases.
Bealer <sup>5</sup>	musculoskeletal pain	32	good to fair results in 29 out of 32 cases; poor results in 3 patients.
Stern <sup>6</sup>	ambulatory patients with a variety of pain- ful conditions	40	good relief in 32; poor in 8.
Bader <sup>7</sup>	dysmenorrhea	20	satisfactory results in 15; fair in 5; all women were able to remain at work.

**analexin** each tablet contains 200 mg. of phenyramidol HCl. **Indications:** for relief of pain, as in dysmenorrhea; postpartum pain; gout; ten-  
sion headache; epigastric and abdominal distress; genitourinary conditions; low back pain, sprains and strains; myalgia, stiff neck, etc. **Dosage:** One or 2 tablets every 4 hours. Analexin is a yellow uncoated tablet.



**analexin-AF** each tablet contains 100 mg. of phenyramidol and 300 mg. of aluminum aspirin. **Indications:** for relief of pain and muscle tension complicated by inflammation and/or fever, as in: arthritis, arthralgia, bursitis, tendinitis. **Dosage:** 2 tablets every 4 hours. Analexin-AF is a two layered tablet—yellow and white.

**REFERENCES:** 1. Gray, A. P., and Heitmeier, D. E.: J. Am. Chem. Soc. 81:4347, 1959. 2. O'Dell, T. B., et al.: Fed. Proc. 18:1694, 1959. 3. Batterman, R. C.; Grossman, A. J., and Mouratoff, G. J.: Am. J. Med. Sc. 238:315, 1959. 4. Wainer, A. S.: The Use of Phenyramidol in Obstetrics & Gynecology, Read before the New York Academy of Sciences, Dec. 5, 1959. 5. Bealer, J. D., Clinical Report 511:592, April 1, 1959. 6. Stern, E.: Clinical Report 511:599, May, 1959. 7. Bader, G.: Clinical Report 511:598, Aug., 1959. (Clinical Reports referred to are on file at the Medical Department, Irwin, Neisler & Co.)

**Meister**

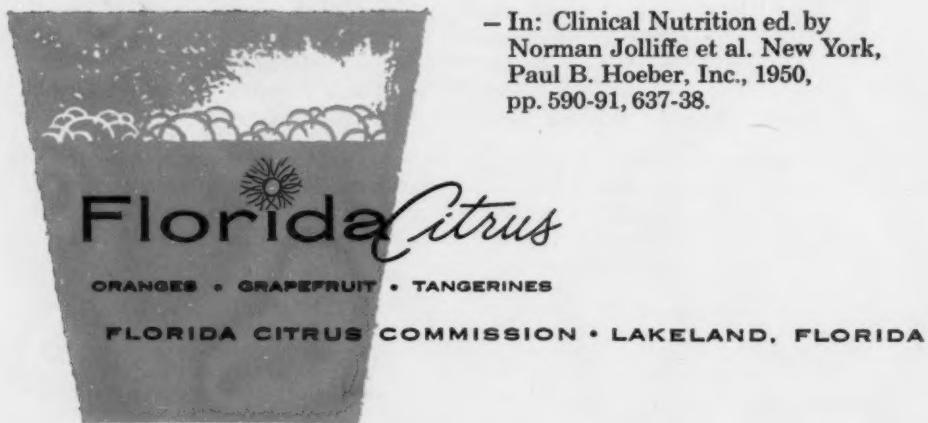
Irwin, Neisler & Co. • Decatur, Illinois



in the season of  
acute infections, extra  
**CITRUS**  
provides the increased  
**VITAMIN C**  
and fluid needed during  
**FEVER**  
to prevent deficiency and  
help maintain resistance\*

\*Tisdall and Jolliffe note the systemic relation in animals between vitamin C and resistance to infection, with increased needs evident in upper respiratory streptococcal infections.

— In: Clinical Nutrition ed. by Norman Jolliffe et al. New York, Paul B. Hoeber, Inc., 1950, pp. 590-91, 637-38.



*she can be...*

# allergy-free for months



## with a one week course of daily injections

*Anergex—1 ml. daily for 6-8 days—usually provides prompt relief that persists for months.*

Children with asthma or asthmatic bronchitis show particularly dramatic response. In all age groups, reports on over 3,000 patients with all common allergic diseases have shown that over 70 per cent derived marked benefit or complete relief following a single short course of Anergex injections.

Anergex—a specially prepared botanical extract—is nonspecific in action; it suppresses allergic reactions regardless of the nature or number of offending allergens.

Anergex eliminates skin testing, long drawn-out desensitization procedures, and special diets. It has been effective even in patients who failed to respond to other therapeutic measures.

Effective in seasonal and nonseasonal rhinitis (pollens, dust, dander, molds, foods); allergic asthma; asthmatic bronchitis and eczema in children; food sensitivities.

Available: Vials containing 8 ml.—one average treatment course.

**WRITE FOR REPRINTS AND LITERATURE**

# ANERGEX®

**the new concept for the treatment of allergic diseases**

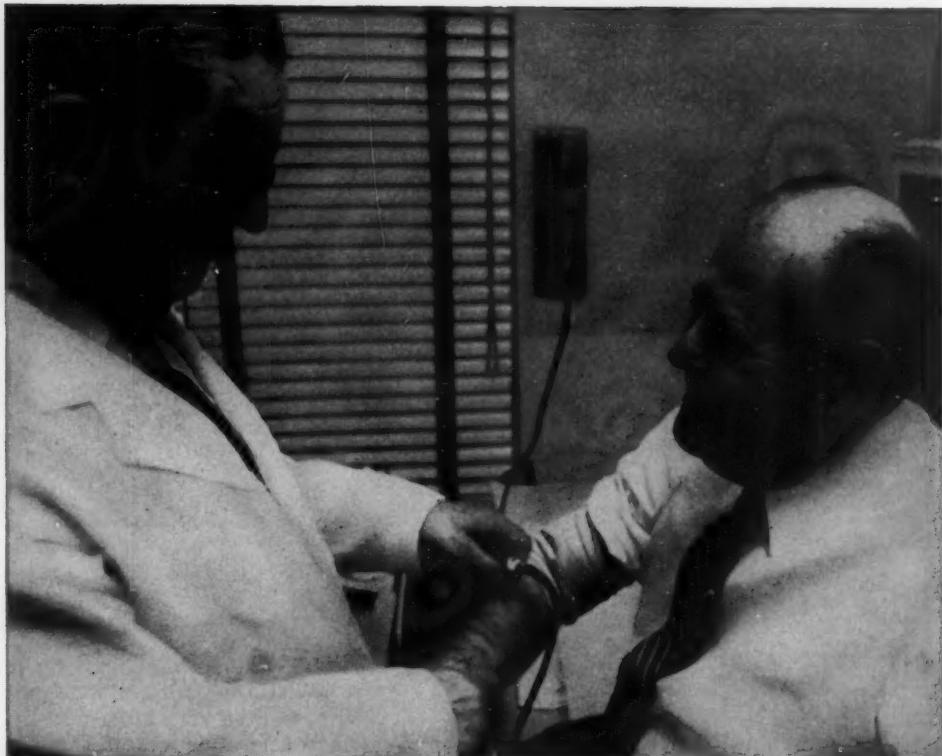
MULFORD COLLOID LABORATORIES



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*Patents Pending*

# Why so many hypertensive patients prefer **Singoserp**:



© CIBA

C I B A  
SUMMIT, N.J.

# It spares them the usual rauwolfia side effects

**FOR EXAMPLE:** "A clinical study made of syrosingopine [Singoserp] therapy in 77 ambulant patients with essential hypertension demonstrated this agent to be effective in reducing hypertension, although the daily dosage required is higher than that of reserpine. Severe side-effects are infrequent, and this attribute of syrosingopine is its chief advantage over other Rauwolfia preparations. The drug appears useful in the management of patients with essential hypertension."<sup>1</sup>

**Almost all side effects relieved when Singoserp was substituted for other rauwolfia derivatives in 24 patients<sup>2</sup>**

Side Effects	Incidence with Prior Rauwolfia Agent	Relieved by Singoserp	Not Relieved*
Depression	11	10	1
Lethargy or fatigue	5	5	0
Nasal congestion	7	7	0
Gastrointestinal disturbances	2	0	2
Conjunctivitis	1	1	0

\*Two of the 24 patients had two troublesome side effects.

# Singoserp<sup>®</sup>

(syrosingopine CIBA)

**First drug to try in new hypertensive patients**

**First drug to add in hypertensive patients already on medication**

**Supplied:** Singoserp Tablets, 1 mg. (white, scored); bottles of 100.

1. Herrmann, G. R., Vogelpohl, E. B., Heitmancik, M. R., and Wright, J. C.: J.A.M.A. 169:1609 (April 4) 1959.
2. Bartels, C. C.: N. E. J. Med. 261:785 (Oct. 15) 1959.

## Modern Medicinals

Concluded from page 82a

**Levanil**, The Upjohn Company, Kalamazoo, Michigan. White, scored tablets, each containing 300 mg. Ectylurea. Indicated for relief of apprehension, tension and anxiety. *Dose:* Adults,  $\frac{1}{2}$  to 1 tablet three or four times daily. At bedtime a dose of 1 to 2 tablets may be given for relief from tension, thus promoting normal sleep. Children,  $\frac{1}{2}$  tablet three or four times daily. *Sup:* Bottles of 50.

**Medihaler-Ergotamine**, Riker Laboratories, Inc., Northridge, California. Inhalator, each cc. of which contains 9.0 mg. of ergotamine tartrate. A dose of 0.36 mg. of ergotamine tartrate is delivered with each inhalation. Indicated for prompt relief from the recurrent, throbbing-type headache, including the "sick" recurrent-type headache and the migraineous headache. *Dose:* Start with one inhalation, then wait five minutes. If not relieved, use again. No more than 6 inhalations should be taken in a 24-hour period. *Sup:* Packages containing 2.5 cc. stainless steel vial and a plastic mouthpiece adapter.

**Murel-S.A.**, Ayerst Laboratories, New York, New York. Sustained action tablets, each containing 40 mg. valethamate bromide. Indicated for spasm of the gastrointestinal tract, genitourinary tract, biliary tract and in active, latent or incipient peptic ulcer. *Dose:* Average is 40 to 80 mg. daily. *Sup:* Bottles of 100 and 1000.

**Naturetin**, E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corp., New York, New York. Indicated in the control of edema and whenever diuresis is required for the

treatment of any edematous state whether caused by cardiovascular and/or renal disease. *Dose:* Average daily dose from 5 to 10 mg. *Sup:* 2.5 mg. and 5 mg. tablets in bottles of 100 and 1000.

**Oreticyl**, Abbott Laboratories, North Chicago, Illinois. Tablets, each containing 25 mg. hydrochlorothiazide and 0.125 mg. deserpidine. Also available with 50 mg. hydrochlorothiazide and 0.125 mg. deserpidine, or 25 mg. hydrochlorothiazide and 0.25 mg. deserpidine. Indicated for patients with established hypertension of any but minor degrees. *Dose:* As directed by physician. *Sup:* All sizes in bottles of 100 and 1000.

**Rela**, Schering Corporation, Bloomfield, New Jersey. Pink-coated tablets, each containing 350 mg. carisoprodol. Indicated for those conditions of the musculoskeletal system characterized by pain, stiffness and spasticity. *Dose:* Usual adult, 1 tablet three times daily and at bedtime. *Sup:* Bottles of 30.

**Surgamycin Topical Spray Ointment**, Surgical Products Division, American Cyanamid Co., New York, New York. Antibiotic ointment, each Gram of which contains 15 mg. tetracycline hydrochloride and 15 mg. neomycin sulfate. Indicated for use on wounds, abrasions, ulcers, draining sinuses and similar superficial lesions, as well as in the treatment of burns. *Use:* Spray directly on affected area, producing a visibly uniform covering, prior to the application of a dressing. *Sup:* 100 Gram Sterile Aerosol dispenser cans containing 30 Grams of ointment.





## NIAMID

*the mood brightener*

**makes the  
cancer patient  
more comfortable**

- reduces impact of pain
- decreases narcotic requirements
- increases appetite
- improves mental outlook

NIAMID lessens the need for narcotics in the depressed cancer patient and appears to potentiate pain-relieving agents. As pain is reduced and mental outlook improves, apprehension and depression are replaced by a brighter and more alert attitude, and appetite returns. The family, too, is cheered by the improvement in the patient's condition. With NIAMID therapy, patient care becomes noticeably less demanding.

*Supply:* NIAMID (brand of nialamide) is available as 25 mg. (pink) and 100 mg. (orange) scored tablets.

Complete references and a Professional Information Booklet giving detailed information on NIAMID are available on request from the Medical Department, Pfizer Laboratories, Division, Chas. Pfizer & Co., Inc., Brooklyn 6, New York



**NIAMID**  
*the mood brightener  
in cancer*

**Pfizer**

*Science for the world's well-being™*



*delivers more steroid to the site*  *of inflammation*

# NASAL SPRAY

# NEO-HYDELTRASOL®

Prednisolone 21-phosphate with Propadrine®, Phenylephrine® and Neomycin

Only NEO-HYDELTRASOL provides its steroid component in true solution—a definite therapeutic benefit, since in pure solution more of the steroid is immediately available to inflamed nasal mucosa.

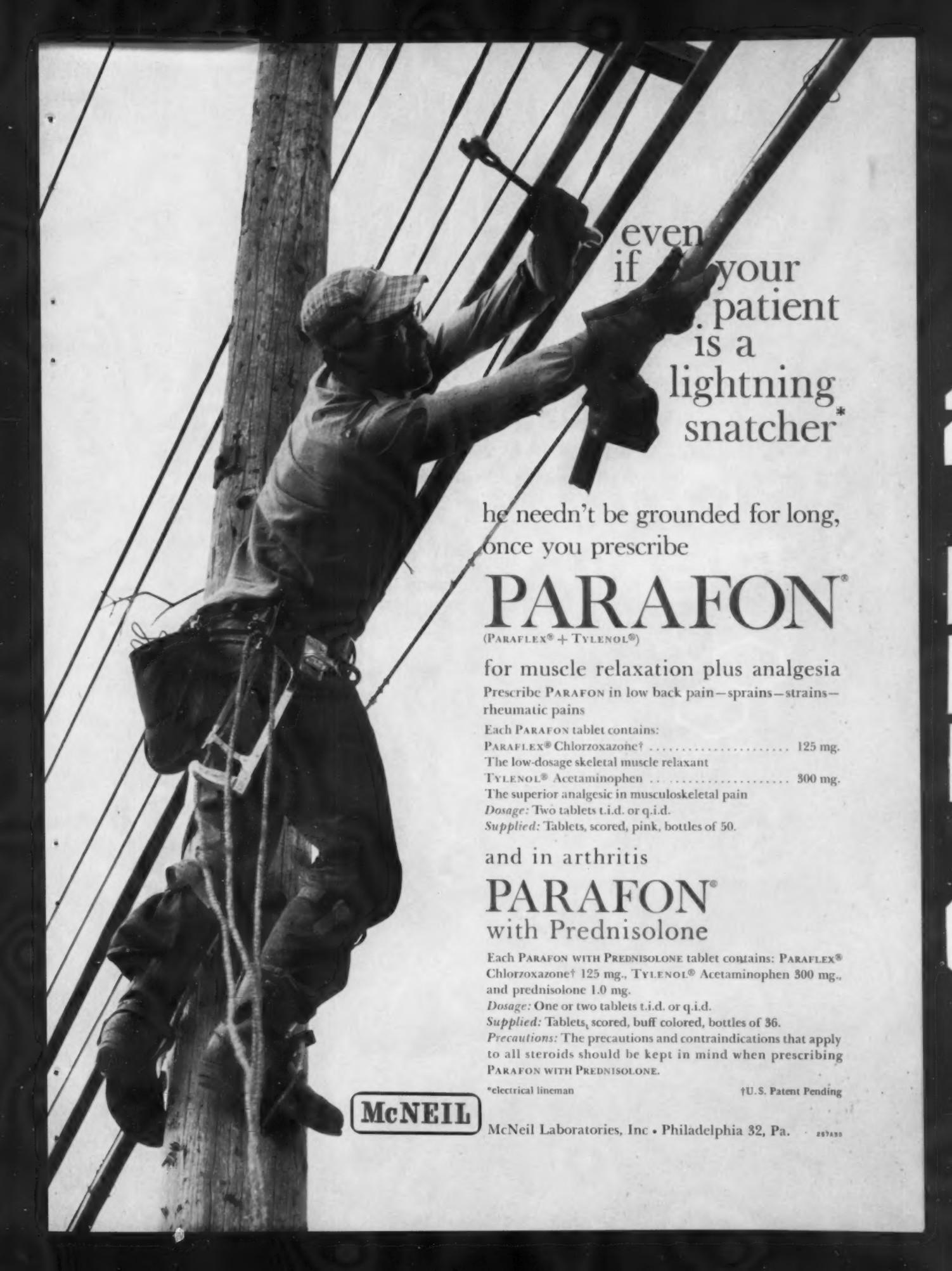
The anti-inflammatory action of the prednisolone 21-phosphate is reinforced by two valuable decongestants—for fast and prolonged action—and neomycin to combat intranasal infection.

Supplied in 15-cc. plastic spray bottles

NEO-HYDELTRASOL is a trademark of Merck & Co., Inc.



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Division of Merck & Co., Inc., Philadelphia 1, Pa.



even  
if your  
patient  
is a  
lightning\*  
snatcher\*

he needn't be grounded for long,  
once you prescribe

# PARAFON®

(PARAFLEX® + TYLENOL®)

for muscle relaxation plus analgesia

Prescribe PARAFON in low back pain—sprains—strains—  
rheumatic pains

Each PARAFON tablet contains:

PARAFLEX® Chlorzoxazone† ..... 125 mg.

The low-dosage skeletal muscle relaxant

TYLENOL® Acetaminophen ..... 300 mg.

The superior analgesic in musculoskeletal pain

Dosage: Two tablets t.i.d. or q.i.d.

Supplied: Tablets, scored, pink, bottles of 50.

and in arthritis

# PARAFON®

with Prednisolone

Each PARAFON WITH PREDNISOLONE tablet contains: PARAFLEX® Chlorzoxazone† 125 mg., TYLENOL® Acetaminophen 300 mg., and prednisolone 1.0 mg.

Dosage: One or two tablets t.i.d. or q.i.d.

Supplied: Tablets, scored, buff colored, bottles of 36.

Precautions: The precautions and contraindications that apply to all steroids should be kept in mind when prescribing PARAFON WITH PREDNISOLONE.

\*electrical lineman

†U.S. Patent Pending

**McNEIL**

McNeil Laboratories, Inc • Philadelphia 32, Pa.

children won't hide  
from this  
**ORAL PENICILLIN** with  
**INJECTION PERFORMANCE**

For both pediatric and adult patients, PEN-VEE K, in either tablet or liquid form, provides high penicillin blood levels rapidly and reliably. It may be prescribed for all infections responsive to oral penicillin . . . and even many usually treated with parenteral penicillin.

The flexibility of dosage form, pleasant taste, and high potency of PEN-VEE K assure acceptability of the full therapeutic dosage.

**SUPPLIED:** Liquid: raspberry-flavored, 125 mg. (200,000 units) per 5-cc. teaspoonful; peach-flavored, 250 mg. (400,000 units) per 5-cc. teaspoonful. Supplied as vials of powder to make 40 cc. Tablets: 125 mg. (200,000 units) and 250 mg. (400,000 units) in vials of 36.

# PEN-VEE® K

Liquid: Penicillin V Potassium for Oral Solution. Wyeth

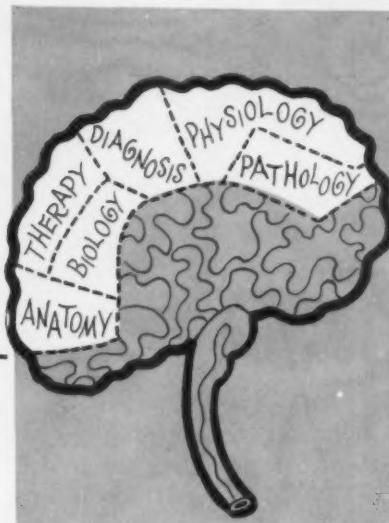
Tablets: Penicillin V Potassium, Wyeth

Wyeth Laboratories, Philadelphia 1, Pa.



A Century of  
Service to Medicine





## Mediquiz

These questions were prepared by the Professional Examination Service, a division of the American Public Health Association. Answers will be found on page 224a.

1. A condition occurring after middle life, usually in male patients with degenerate arteries, which is characterized by paroxysmal attacks of abnormal slowness of the ventricular beat, the rate sinking as low as 20 per minute or even less, together with excessive pulsation in the veins at the root of the neck, corresponding with the auricular contractions and much more rapid than the ventricular beats is known as:
  - A) Affektepilepsie of Bratz.
  - B) Stokes-Adams syndrome.
  - C) Cheyne-Stokes syndrome.
  - D) Jacksonian fits.
  - E) Mediastinal syndrome.
2. The percentage of patients who survive the acute episode of myocardial infarction is usually given as about:
  - A) 10.
  - B) 30.
  - C) 50.
  - D) 80.
  - E) 95.
3. Which of the following questions would be most effective in testing a provisional diagnosis of irritable colon in a patient complaining of abdominal pain?
  - A) Is your abdomen usually tender?
  - B) Do you tend to bloat after meals?
  - C) Have you had any black stools?
  - D) Do you tend to vomit a great deal?
  - E) Are your pains relieved by belching?
4. The most common expanding intracranial lesion in childhood is a:
  - A) Medulloblastoma.
  - B) Pituitary adenoma.
  - C) Craniopharyngioma.
  - D) Tuberculoma.
  - E) Meningioma.
5. The main and most significant finding in myxedema heart disease is:
  - A) Cardiac enlargement.
  - B) A small, quiet heart.
  - C) High output failure.
  - D) Cardiac arrhythmias.
  - E) Hypotension.
6. The stage in the course of a brucella infection when the patient is most apt to develop eye infection is:
  - A) During the first week after subsidence of the acute symptoms.
  - B) Within 24 hours after the onset of acute symptoms.
  - C) Shortly before the onset of systemic symptoms.
  - D) The chronic stage.
  - E) During the most acute stage of the disease.
7. Moebius' sign often seen in the post-encephalitic Parkinsonian syndrome is the inability of the eyes to converge properly. It is also seen frequently in:

*Concluded on page 100a*

New from Lederle

a logical combination in appetite control

# BAMADEX<sup>®</sup>

meprobamate with dextro-amphetamine sulfate LEDERLE

▼  
meprobamate eases  
tensions of dieting

▼  
d-amphetamine  
depresses appetite  
and elevates mood

▼  
...without  
overstimulation

...without  
insomnia

...without  
barbiturate hangover

Each coated tablet (pink) contains:  
d-amphetamine sulfate . . . . 5 mg.  
meprobamate . . . . . 400 mg.  
*Dosage:* One tablet taken one-half  
to one hour before each meal.



LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

Helps prevent vitamin-mineral deficiencies by providing comprehensive nutritional supplementation. Just one capsule daily supplies therapeutic doses of 9 important vitamins plus significant quantities of 11 essential minerals and trace elements.

Each MYADEC Capsule contains: **VITAMINS**: Vitamin B<sub>12</sub> crystalline—5 mcg.; Vitamin B<sub>2</sub> (riboflavin)—10 mg.; Vitamin B<sub>6</sub> (pyridoxine hydrochloride)—2 mg.; Vitamin B<sub>1</sub> mononitrate—10 mg.; Nicotinamide (niacinamide)—100 mg.; Vitamin C (ascorbic acid)—150 mg.; Vitamin A—25,000 units; Vitamin D—1,000 units; Vitamin E (mixed tocopheryl acetates)—5 I.U.; **MINERALS** (as inorganic salts): Iodine—0.15 mg.; Manganese—1.0 mg.; Cobalt—0.1 mg.; Potassium—5.0 mg.; Molybdenum—0.2 mg.; Iron—15.0 mg.; Copper—1.0 mg.; Zinc—1.5 mg.; Magnesium—6.0 mg.; Calcium—105.0 mg.; Phosphorus—80.0 mg. Bottles of 30, 100, 250, and 1,000.

PARKE, DAVIS & COMPANY · DETROIT 32, MICHIGAN



when he sleeps through breakfast  
—and works through lunch...

**myadec®**  
high potency vitamin-mineral supplement

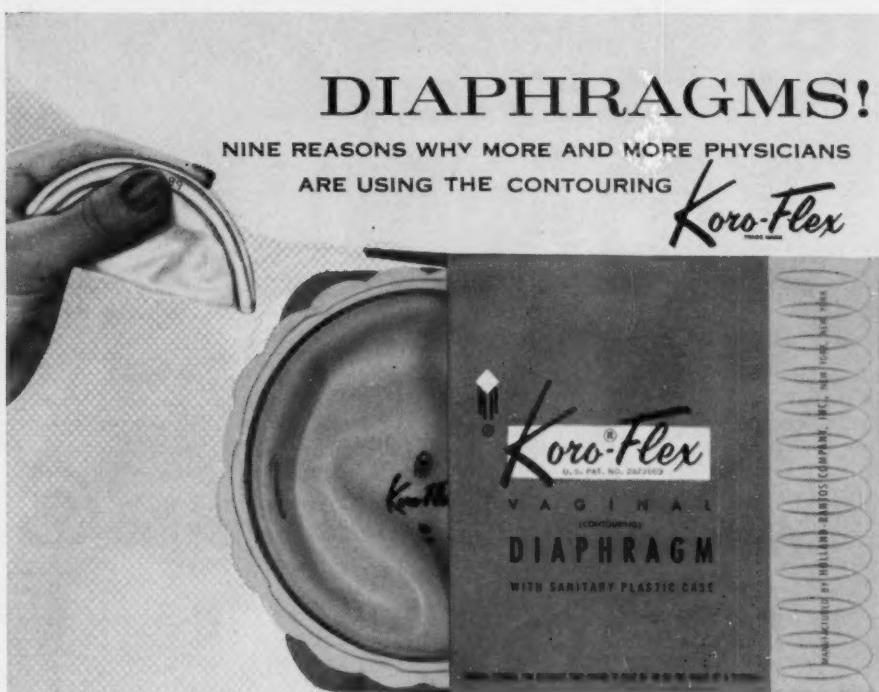
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# DIAPHRAGMS!

NINE REASONS WHY MORE AND MORE PHYSICIANS  
ARE USING THE CONTOURING

Koro-Flex



1. Reduces your fitting instruction time.
2. Patient ease of insertion—automatic placement.
3. Develops patients' confidence. Easy to use.
4. Folds behind pubic bone with suction-like action, forming an effective barrier.
5. Seals off cervical area.
6. Locks in spermicidal lubricant—delivers it directly under and next to the os uteri.
7. Keeps its place—doesn't shift.
8. Simple to remove.
9. Aesthetically acceptable. Is most comfortable. KORO-FLEX (contouring) Diaphragms may be used where ordinary coil-spring diaphragms are indicated and for Flat rim (Mensinga)-type as well.

Recommend: KORO-FLEX Compact, the ONLY compact that provides the arcing diaphragm (60-95 mm), jelly and Koromex cream (trial size). More satisfied patients result from trying both and then selecting the one best suited to physiological requirements. Eliminates guessing. Supplied in feminine clutch-style bag with zipper closure.



Available in all prescription pharmacies.  
Write for descriptive literature.  
*Always insist on the use of time-tested Koromex Jelly or Cream with diaphragm.*



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Manufacturers of Koromex Products

## IMPROVING ON NATURE

One of nature's most abundant gifts, oil is of more value to man because he has processed it to meet his specific requirements. In the treatment of hypothyroidism, Proloid, the only improved but complete thyroglobulin, offers similar evidence of man's ingenuity in improving on nature.

An exclusive double assay assures unvarying potency and a uniform clinical response from prescription to prescription. To restore patients to a euthyroid state—safely and smoothly—specify Proloid. Three grains of Proloid daily is the average dosage for patients with mild forms of hypothyroidism.

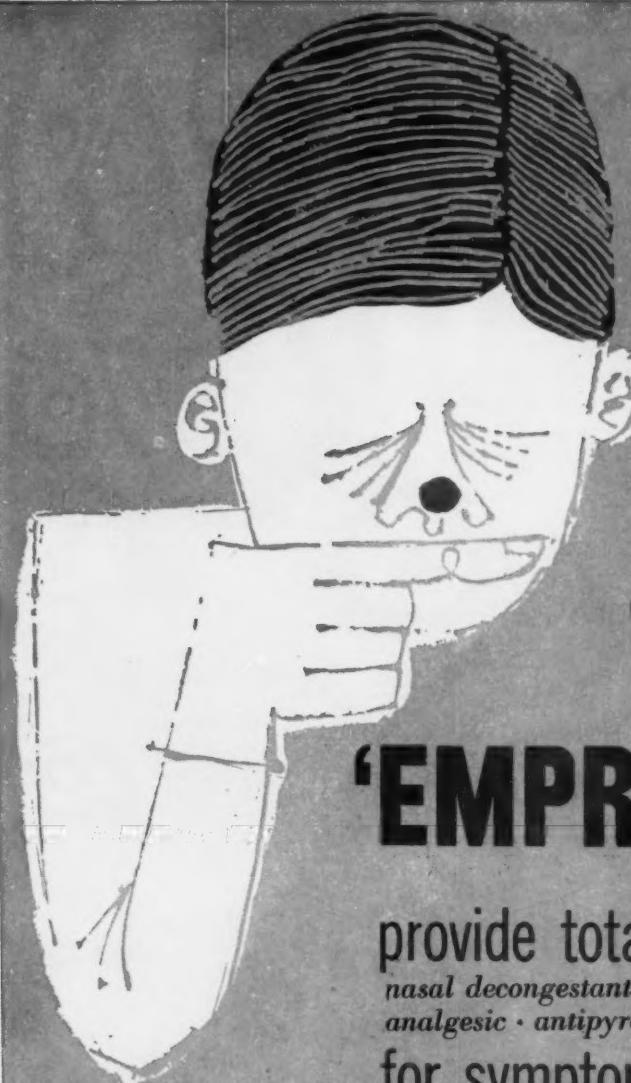
STANDARD OIL CO. (N. J.)

PRO GP 61

*dependable  
safe  
economical*

THYROID  
**PROLOID®**





now...  
uncommon  
relief  
for the  
common  
cold

# 'EMPRAZIL'®

TABLETS

provide total therapy

nasal decongestant • antihistaminic  
analgesic • antipyretic

for symptomatic relief

aches • fever • pain • respiratory tract  
congestion

*Dosage:* Adults and older children: One or two tablets t.i.d.  
as required. Children 6 to 12 years of age: One tablet t.i.d.  
as required.

*Supplied:* Bottles of 100 and 1000.

*Each orange and yellow layered tablet contains:*

'Sudafed'® brand Pseudoephedrine Hydrochloride	20 mg.
'Pertzil'® brand Chlorcyclizine Hydrochloride	15 mg.
Acetophenetidin	150 mg.
Aspirin (Acetylsalicylic Acid)	200 mg.
Caffeine	30 mg.

Complete literature available upon request.



BURROUGHS WELLCOME & CO.  
(U.S.A.) INC., Tuckahoe, N.Y.

XYLOCAINE  
LOCAL &  
TOPICAL  
ANESTHETIC  
NERVE BLOCK  
INJECTION  
WAND SPRAY

**suturing:** Xylocaine® HCl Solution applied topically will permit cleaning and suturing of wounds with patient comfort in an emergency or in the office. Fast acting — Safe — Dependable.

**bursitis:** Xylocaine HCl Solution injected into the painful area will diffuse around the bursae relieving pain promptly — often restoring normal freedom of motion. Prolonged anesthesia often prevents recurring pain.

**therapeutic block:** Xylocaine HCl Solution interrupts the underlying mechanism of pain, with relief often persisting even after the block has disappeared. It is of value in assisting motion or manipulation; for severe, intractable pain conditions; and in allowing patient comfort for other procedures.

**minor surgery:** Xylocaine HCl Solution will diffuse over a wide operative field, permitting pain-free removal of warts, cysts, moles, etc., and giving safe, effective, and predictable anesthesia for patient comfort.

**Supplied:** Multiple dose vials, 20 cc. and 50 cc.; 0.5%, 1% and 2% without and with epinephrine 1:100,000. Ampules, 2 cc.; 2% without and with epinephrine 1:100,000.



U.S. PAT. NO. 2,441,498 MADE IN U.S.A.



## she calls it "nervous indigestion"

**diagnosis:** a wrought-up patient with a functional gastro-intestinal disorder compounded by inadequate digestion. **treatment:** reassurance first, then medication to relieve the gastric symptoms, calm the emotions, and enhance the digestive process. **prescription:** new Donnazyme—providing the multiple actions of widely accepted Donnatal® and Entozyme®—two tablets t.i.d., or as necessary.

Each Donnazyme tablet contains

—In the gastric-soluble outer layer: Hyoscyamine sulfate, 0.0518 mg.; Atropine sulfate, 0.0097 mg.; Hyoscine hydrobromide, 0.0033 mg.; Phenobarbital (1/8 gr.), 8.1 mg.; and Pepsin, N. F., 150 mg. In the enteric-coated core: Pancreatin, N. F., 300 mg., and Bile salts, 150 mg.

**ANTISPASMODIC - SEDATIVE - DIGESTANT**

# DONNAZYME®

A. H. ROBINS COMPANY, INCORPORATED • RICHMOND 20, VIRGINIA

## Mediquiz

Concluded from page 93a

- A) Cerebellar tumors.
- B) Injury to the cervical sympathetic nerve chain.
- C) Thyrotoxicosis.
- D) Carotid-jugular fistulae in the neck.
- E) Lead poisoning.

8. A 50-year-old woman complained of a swollen right eye of sudden onset. Examination revealed edema of the lids, conjunctivae and cornea on the right with moderate exophthalmos and ophthalmoplegia. The orbital contents were observed to pulsate and a murmur was audible over the temporal region. The cause of her difficulty was probably:

- A) Retro-orbital angioma.
- B) Retro-orbital hemorrhage.

- C) A carotid-cavernous sinus aneurysm.
- D) Retinal detachment.
- E) Thrombosis of the central retinal vein.

9. Keratitis sicca occurs most often in:

- A) States of dehydration.
- B) People who work in the open air, such as farmers.
- C) Infants with congenital absence of the lacrimal ducts.
- D) Aged, arteriosclerotic males.
- E) Women around the climacteric.

10. Volkmann's contracture is considered to be caused by:

- A) Direct injury to the muscles.
- B) Injury to the nerve supply of the muscles.



Trademark, brand of Phenformin HCl

the "full-range" oral hypoglycemic agent  
...safely lowers blood sugar in mild, moderate  
and severe diabetes, in children and adults

start  
low

- C) Interference with the blood supply of the muscles.
- D) Congenital deformity of the muscles.
- E) Calcification of the muscles.

11. The proper treatment of the Bennett type of fracture of the first metacarpal bone requires:

- A) Adduction and fixation to the hand.
- B) Immobilization in extension.
- C) Immobilization on a straight dorsal splint.
- D) Immobilization on a curved splint.
- E) Abduction and traction.

12. The best method now available to increase the number of cures of cancer of the stomach is to:

- A) Perform total gastrectomies.
- B) Decrease the incidence of pulmonary embolism by vein ligation.
- C) Irradiate the abdomen after gastrectomy.
- D) Reduce the delay from onset of symp-

- toms to surgical intervention.
- E) Advocate the wider use of nitrogen mustard.

13. Over one-half of the lesions of tuberculosis of the mouth are found on the:

- A) Lips.
- B) Gingiva.
- C) Tonsils.
- E) Tongue.
- D) Palate.

(Answers on page 224a)

#### MEDIQUIZ REPRINTS AVAILABLE

Through the cooperation of the Professional Examination Service, Division of the American Public Health Association, special reprints of 150 MediQuiz questions and answers are now available in booklet form for \$1 per copy. To stimulate further study, the source of each answer is listed in the booklet. The supply of booklets is limited. To be certain you'll have a copy, send your dollar now to the Professional Examination Service Department MT-2, American Public Health Association, 1790 Broadway, New York City 19, New York.

The "Start Low! Go Slow!" dosage pattern with DBI enables a maximum number of diabetics to enjoy the convenience, comfort and satisfactory regulation of oral therapy in:

- stable adult diabetes
- unstable (brittle) diabetes
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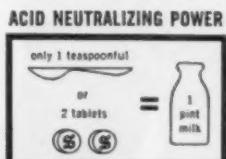
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# Diagnosis and Treatment of Facial Pain

*"Pain is perfect misery,  
the worst of evils  
and if excessive  
overturns all patience."*

MILTON, *Paradise Lost*

MICHAEL SCOTT, M.D.  
Philadelphia, Pennsylvania

**F**acial pain often subsides spontaneously. Occasionally, it is severe and persistent and taxes the tranquility of the sufferer and the ability of the physician.

A review of the anatomy and the neurophysiology involved may give a better understanding of pain syndromes.

## Anatomy Involved

- Paranasal sinuses, nose and contiguous structures.
- Orbital contents.
- Teeth, alveoli and oropharynx.
- Mandible, temporomandibular articulation, soft tissues of the face.
- Auricle and external auditory canal.
- Salivary glands.
- Sphenopalatine ganglion.
- Facial blood vessels, particularly branches of external carotid artery.
- Large vessels in the neck.
- Heart and great vessels of mediastinum.

From the Department of Neurosurgery, Temple University Medical Center, Philadelphia, Pennsylvania.

- Intracranial structures—dura, large blood vessels at base of brain, cranial nerves (fifth, seventh, ninth and tenth).
- Cervical spine, cord, and nerve roots.

## Nerve Pathways Involved

Sensory innervation to the facial skin, the eyeball, nasal structures, the upper nasopharynx, the paranasal sinuses and the structures of the mouth is by the trigeminal (fifth cranial) nerve. The sphenopalatine, otic and submaxillary ganglia are involved in the autonomic innervation, but the actual pain pathways via these ganglia are not completely known.

Part of the uvula and oropharynx receive sensory innervation via the glossopharyngeal (ninth cranial) and vagus (tenth cranial) nerves.

Sensory innervation to the anterior portion of the auricle and the anterior wall of the external auditory canal is by the fifth cranial nerve. The posterior portion of the auricle (concha auriculae) and the posterior wall of the external auditory canal are supplied by

Arnold's nerve (the auricular branch of the vagus), which also innervates a small triangular area at the base of the posterior surface of the auricle; the major portion of the latter is innervated by the second and third cervical nerves.

The eardrum receives sensory innervation from the fifth, seventh (intermedius), ninth and tenth cranial nerves.

The blood vessels of the face (mainly branches of external carotid) are supplied with pain fibers through the autonomic nervous system. The afferent fibers from these vessels and the carotid arteries in the neck descend in the sympathetic chain from the first to possibly the fifth thoracic sympathetic ganglia. They enter the posterior roots of these five thoracic nerves by way of the white rami, enter the spinal cord and cross over to the opposite side and ascend in the spinothalamic tract to the thalamus and sensory cortex, where the pain reaches conscious levels. Some authorities believe that some of the pain fibers from the carotid sheath connect with the vagus nerve via the nodose ganglion.

The dural surface at the base of the brain above the tentorium cerebelli is supplied by the fifth cranial nerve. The middle meningeal artery and its adjacent dura and the dural venous sinuses are also innervated by this nerve. The dural surface below the tentorium cerebelli and in the cerebellar fossa is supplied by the ninth and tenth cranial nerves.

Innervation of the large blood vessels at the base of the brain is not clearly understood, but it is thought that they have an autonomic afferent supply similar to that described for the vessels of the face and that they also receive innervation from the fifth cranial nerve above the tentorium cerebelli and the ninth and tenth cranial nerves below the tentorium.

The descending root of the trigeminal (fifth) cranial nerve which carries pain fibers mainly to the forehead (first division of the fifth) and which descends as low as the third or fourth

cervical dermatomere is said to have connections with afferent pain stimuli from cervical structures at these levels. Thus, occasionally cervical spine pathology can also cause referred pain to the forehead.

### Insist on Clear Description of Pain

The patient's description of his pain is frequently a clue to the structures involved or to the etiology:

- Sharp, stabbing, lightning-like pain radiating above the forehead or across the maxilla or low jaw, and into teeth or side of tongue suggests trigeminal neuralgia or referred pain in a branch of the trigeminal nerve.
- Constant focal, deep, aching, boring and pressure pain, particularly if associated with local tenderness, is common in disease of the frontal or maxillary sinuses or in local disease of the facial structures. A pressure sensation may be associated with functional conditions and anxiety states. However, one should assume an organic cause unless it is proved otherwise.
- Throbbing pain synchronous with pulse beat suggests increased vascularity in tissues, inflammation, involvement of blood vessels or hypertension.
- Burning pain can be present in irritative lesions involving nerves and blood vessels, and in lesions (postherpetic) of the gasserian ganglion or thalamus. This type of pain is frequently called functional, but I am convinced that this is only because we cannot find an obvious cause for it.
- Pain associated with a loss of or decrease in sensation in the field of pain (so-called anesthesia dolorosa) is caused by lesions (usually tumors) of the gasserian ganglion.
- Sudden, severe, constant pain in or behind one eyeball and/or above the eyebrow in the forehead, whether throbbing, boring, or aching, is a frequent symptom of intracranial bleeding from an aneurysm, particularly when associated with signs of ocular muscle paralysis on that side.

It is helpful to insist that the patient outline with his forefinger the place of onset of the

This is a revision of an article published by the author in 1954.<sup>20</sup>

pain and its radiation. A patient with an organic lesion will have no difficulty in doing this. One with functional pain will be vague and vary the site. A patient with trigeminal neuralgia will frequently refuse to touch his face because he knows that it will bring on an attack if he touches a trigger zone, usually located above one corner of the lip or in the nasolabial area.

Pain initiated by movement of the lower jaw can be due to disease involving the temporomandibular area, the muscles of mastication or the temporal artery.

Sharp radiating pain brought on by talking, eating, or swallowing is common in trigeminal neuralgia; pain initiated by swallowing alone suggests glossopharyngeal neuralgia or disease of the oropharynx or the deep structures of the neck.

Pain which usually occurs at night is common in histaminic cephalgia.

If an adult states that he has had facial pain since childhood or adolescence; the odds are that no one will relieve him of it and that he is "married" to his complaint. However, aneurysms and migraine can cause pain for many years.

The severity of the pain can frequently be evaluated by the type and amount of drugs taken for relief.

### Functional Pain

So-called functional pain, which probably should be termed physiopathologic (the patient does experience it), is confusing because we do not understand the mechanism. Nevertheless, since it is complained of by patients who are of hysterical personality or undergoing emotional problems, one must distinguish it from that caused by known organic disease. The pitfall is that a patient with true hysteria has the same chances of developing cancer or other organic lesions as the non-hysterical patient. The following pattern of "functional pain" is therefore presented with the warning that any part of it may be present in an hysterical or emotionally upset individual with an organic lesion.

The patient will often have difficulty in describing the quality of the pain but will usually admit to a constant pressure or burning sensation. He will have difficulty in localizing it with a finger, will vary the site and if pressed, may finally say, "I am not sure where it is or where it goes." Emotional upsets always bring it on. It will be used frequently as an excuse for avoiding a social gathering or an unpleasant task. Anodynes such Aspirin, Bufferin® and Anacin®, even in large doses, give no relief and many patients state, "I don't take medicine any more because nothing helps." The patient will often admit that he sleeps well throughout the night and when occupied does not notice the pain. He will appear comfortable to the examining physician and yet, that moment admit that he has "terrible pain."

I have found the following simple tests helpful in diagnosing "functional pain":

● **MALAR TEST**—I request the patient to outline, if possible, the site of maximal pain. I then make pressure with my thumb over the malar area or any bony prominence on that side of the face away from the area of pain and dramatically inquire, "Now what has happened to your pain?" In the presence of the functional (reversible) type, the patient usually says, "It has stopped." I then suddenly release the pressure and ask, "Now what has happened?" In the functional type, the patient usually states, "It's back again." The maneuver is repeated three or four times and if the patient repeatedly gives the same reply, and I can turn the pain "off and on" with my thumb, I assume that the pain is functional or at least "reversible by suggestion." If the patient states that the malar pressure makes the pain slightly better or worse or does not affect it at all, no conclusions are drawn from the test.<sup>19</sup>

● **ABSURD PAIN RADIATION PRODUCED BY SUGGESTION**—A statement is made to a third person present (doctor or nurse) that in cases similar to the patient's, pressure (for example, over the right eyebrow if the patient has right facial pain) will cause the pain to shoot into the left lower teeth. Pressure is then exerted over the eyebrow and if the pain occurs in the

area suggested, we know that the patient is malingering or is subject to suggestion and requires psychiatric evaluation.

● INTRADERMAL SALINE WHEAL TEST—The patient is told that his pain will be relieved by an injection. Procaine or analgesics are never used for the test since these would confuse the result. Everything in the technic is done in such a way as to impress the patient with the procedure. Three or four intradermal wheals are made by injecting physiologic saline solution into the painful area. The injection should cause some discomfort. The patient is instructed to keep the bandage on for two hours, and is told that he may sit up after four hours and be out of bed in six hours—again to impress him with the importance of treatment. The reversible nature of the pain is established only if it is completely "relieved" for at least twenty-four hours after the procedure.

### Syndromes of Facial Pain

Occasionally, I see patients who have had teeth extracted in whom an intractable pressure and burning sensation develops about the teeth and gums. Many such patients have had repeated re-explorations for root fragments and infection. Roentgenograms of the teeth and gums are usually negative. There are usually no signs of obvious infection. I would warn against any alcohol nerve blocks or nerve section in such cases. The patients will complain just as bitterly about the "numbness" from the injection as they do about the original pain. I do not know the answer for such pain. Perhaps, good dental care, careful use of sedatives or anodynes, but no narcotics; the avoidance of hot liquids, foods and sauces, and tobacco might give some relief. The pain may subside in time if not complicated by useless surgery.

TIC DOULOUREUX (TRIGEMINAL NEURALGIA)—This condition is well known but worth reviewing. Its incidence is greatest in persons more than fifty years of age. The pain is usually unilateral and is described as agonizing, sharp, shooting, stabbing and fleeting,

as though brought on or relieved by the "press of a button." Hundreds of episodes may occur in one day and these are frequently precipitated by talking, eating, chewing or by touching a trigger zone. The latter may be any spot in the cutaneous or mucosal sensory field of the trigeminal nerve, usually about the corners of the lips, on the side of the tongue, or in the alveoli or nasolabial area. In at least ninety percent of the patients, the pain radiates diagonally across the cheek and maxilla and into the nose or upper lip, jaw or teeth (second division) or along the lower jaw, teeth, lower lip, side of tongue or tragus of the ear (mandibular division). Occasionally, two or more divisions may be involved. In approximately five percent of the patients, the pain involves the supra-orbital area and shoots upward from the inner third of the eyebrow to beyond the hairline. *Results of neurological examination are negative and there are no paresthesias.* Between attacks, the patient is comfortable, but fears the next episode. He will not wash, shave or eat for fear of inducing an attack. If the pains come fast, he will not talk or he will mumble through closed lips to decrease facial and jaw movements. I have never seen a patient with tic douloureux become addicted to narcotics. Most are of a stable temperament.

Tic douloureux must be distinguished from trigeminal pain secondary to diseased teeth, malignancy involving the facial structures or the base of the skull, and tumor of the gasserian ganglion or of the cerebellopontile angle. However, these lesions present additional symptoms and signs which will be described in the section dealing with pain produced by intracranial lesions.

Unfortunately, in many cases of tic douloureux the diagnosis is not established until some or all of the teeth have been removed. Thus, the dentist should be familiar with the classic symptoms of this condition and avoid useless extractions.

Medical therapy is usually futile. It prolongs the agony for weeks and even months, and finally subjects a weakened and emaciated patient to alcohol block or surgery. Medical

therapy in trigeminal neuralgia is justified (1) if the patient refuses alcohol block or surgery; (2) if the attacks are mild, infrequent and of short duration; (3) if the pain is atypical; (4) if the patient is feeble or has an illness which prohibits surgery.

The following drugs have helped some patients:

- *Trichlorethylene Inhalations* — A vial containing 1.00 cc. is crushed in a handkerchief and the contents inhaled while the patient lies in bed. The procedure is repeated every four hours each day for as long as three to four weeks, depending on the reaction to the drug (lightheadedness, headaches).

- *Crystalline Vitamine B12*—A dose of 1000 micrograms is injected intramuscularly daily for seven to fourteen days and then thrice weekly for two to three weeks.

- *Protamide*—A dose of 1.2 cc. intramuscularly daily for seven to fourteen days, then twice weekly for two to three weeks.

- *Dilantin*—100 mgms. (m.) q. six hours for seven to fourteen days (watch for drowsiness or ataxia).

- *Whiskey*—30 cc. and aspirin 600 mgms. preferably at night and repeated every two hours for maximum of three consecutive doses in twelve hours.

*Alcohol Nerve Block*—True trigeminal neuralgia is relieved promptly by an accurate injection of absolute alcohol into the involved nerve branch. Relief of pain is dramatic and lasts until the nerve regenerates and sensation returns—usually from six months to a few years. Even in skilled hands, the injection at times is unsuccessful and may have to be repeated. If pain recurs and the patient is satisfied with the relief from the block, the procedure is repeated. One has only to see the prompt relief of pain following a successful alcohol injection and the gratitude of the patient to realize the unwarranted agony that the sufferer experiences while he is "waiting" for weeks for relief from drugs.

Jaeger has recently advocated injection of boiling water into the gasserian ganglion.<sup>21</sup> He claims less side effects and less facial anal-

gesia than from alcohol injection. This method can be tried if alcohol block of the maxillary or mandibular division is unsuccessful. The blocking of these division peripheral to the ganglion carries less morbidity than hot water or alcohol injection into the ganglion.

*Surgical Procedures*—If the patient prefers permanent relief without the nightmare of recurrences and the discomfort of the alcohol injections, *partial or complete section of the posterior roots of the trigeminal nerve is advised*. This can be done by the transtemporal route of Spiller-Frazier or by the Dandy approach through the posterior fossae. The results are successful with either operation if the neurosurgeon is skilled in the approach he prefers. The mortality rate is minimal. Transitory facial paralysis is an uncommon complication. Corneal ulceration occurs occasionally, due to trophic changes or irritation of the analgesic cornea.

Following the complete section, one side of the patient's face is permanently analgesic, the ear feels full and the nose congested. Occasionally, the pain of the trigeminal neuralgia is relieved but the patient complains of a burning sensation in the analgesic area. The majority of patients are comfortable after the operation, permanently relieved of their pain and grateful.

Sjoqvist has advocated *section of the descending trigeminal tract* in the medulla in order to relieve tic douloureux without producing a loss of touch sensation in the face. This procedure carries a greater risk than that associated with section of the posterior roots of the trigeminal nerve, the results are not consistent, and it is now reserved for unusual problems such as bilateral tic douloureux and for use in combination with other cranial nerve sections for malignancies of the face and neck.<sup>1</sup>

Taarnhoj, in 1952, reported ten patients in whom relief of trigeminal neuralgia was obtained by *decompression but without section of the roots of the gasserian ganglion*. Although the rationale of the procedure was not understood, the retention of facial sensation de-

manded further experience with this procedure. Some neurosurgeons in this country have tried the operation and report short-term successes, recurrence of pain, and high incidence of facial and ocular muscle paralysis.<sup>2, 3</sup> Taarnhoj reviewed his results in 1954 and concluded: "It is still too early to advocate this surgical procedure as a standardized operation at present."<sup>4</sup>

At this writing his conclusion still holds and most neurosurgeons still prefer section of the roots by temporal (Frazier) technique.

**PAIN PRODUCED BY MALIGNANCY OF THE FACIAL BONES, SINUSES OR CONTIGUOUS STRUCTURES**—Such pain is severe, persistent and gradually refractory to ordinary anodynes. It is frequently deep, boring and aching and may have a sharp lancinating component if a branch of the trigeminal nerve is involved. The cause of such pain is often obvious too late. In its early stage it may be confused with ordinary sinus disease, tic douloureux, tooth infection or atypical vascular neuralgia. The base of the skull may be invaded by tumor, and head and neck pain may develop far removed from the original site of the lesion. When chronic pain is accompanied by bleeding (frequently spotty) or unusual discharge from the nose or throat, malignancy should be suspected. An early diagnosis of such lesions can be made only by *frequently repeated, careful examinations and roentgenographic studies*.

Since many nasopharyngeal tumors gradually involve the fifth, ninth, and tenth cranial nerves and the second and third cervical nerves, relief can occasionally be obtained by alcohol block of branches of the trigeminal nerve and later by unilateral suboccipital intracranial section of combinations of these nerves at one operation. This procedure, however, should be reserved for cases in which pain cannot be controlled by alcohol block, adequate doses of narcotics, nitrogen mustard or similar chemicals, x-ray therapy, or in which untoward effects from the narcotics or medication make the patient miserable.

**PAIN REFERRED FROM INTRACRANIAL LESIONS**—Any intracranial tumor that irritates or invades the dura or the large blood vessels

at the base of the brain can cause referred pain to the face, usually in the forehead or behind the eye or in the maxilla. Although such pain reference is more common with masses in the anterior or middle fossae (meningioma, carcinoma, chordoma, glioma), tumors under the occipital lobe irritating the supratentorial surface of the dura can also produce such pain reference because the dural covering of the entire base above the tentorium is supplied by the fifth nerve (see sensory innervation).

- *Tumors of the Gasserian Ganglion (ganglioneuroma, meningioma, glioma)*—frequently produce unilateral, sharp ticlike pains or paresthesias in one or all branches of the trigeminal nerve, and this pain is associated with various degrees of anesthesia of the face (anesthesia dolorosa, painful anesthesia), thus excluding true trigeminal neuralgia which is never associated with loss of sensation.

- *Tumors of the Cerebellopontile Angle (usually acoustic neurinoma, occasionally meningioma, sarcoma, cholesteatoma)*—These tumors may press on the posterior roots of the trigeminal nerve or its descending root in the medulla and produce ticlike pain or paresthesia in the face with or without partial anesthesia. Loss of corneal sensation on the side of the tumor is an early finding.

Since the acoustic neurinoma comes from the sheath of the eighth cranial (acoustic or auditory) nerve, unilateral tinnitus and progressive deafness often occur before the facial pain and anesthesia. As the mass enlarges, it causes unilateral cerebellar signs (including ataxia, loss of muscle tone and awkwardness in using fingers).

Finally, pressure against the fourth ventricle obstructs the circulation of ventricular fluid and results in symptoms of increased intracranial pressure (headaches, vomiting, drowsiness, choked disc, slow pulse and respirations, and elevation of the systolic blood pressure).

- *Intracranial Aneurysms*—Sudden unilateral, severe, aching, boring pain in the forehead and in or behind one eye is an early

symptom of bleeding from a cerebral aneurysm. When this pain accompanies a partial or complete paralysis of the third cranial (oculomotor nerve) on the same side, the diagnosis is more certain (Figure 1). "The upper lid droops like a drawn window shade. The pupil is dilated and the eyeball is turned outward." Nuchal rigidity and blood in the spinal fluid establishes the diagnosis which is confirmed by cerebral angiography.

Since most intracranial aneurysms are unilateral and are situated near the third cranial (oculomotor) nerve, the above syndrome is most frequent following rupture. If an aneurysm ruptures in the cerebellar fossae, the pain is usually first referred to the retroauricular and nuchal regions. When the subarachnoid bleeding becomes generalized over the entire brain, no matter where the rupture, the pain may be felt in any or all parts of the cranium and the lesion cannot be localized.

Bleeding aneurysm is most commonly confused with disease of the frontal sinus, particularly if a third cranial nerve paralysis has not occurred or is not obvious. Unilateral glaucoma should also be ruled out. However, the *sudden onset* and *nuchal rigidity* should demand a spinal puncture and bloody spinal fluid will establish the diagnosis.

Spontaneous, non-traumatic, intracerebral hemorrhage (hematoma) into a frontal or temporal lobe can also produce unilateral pain in the forehead. The etiology is usually aneurysm, blood dyscrasia or hypertension in patients less than fifty years of age, and arteriosclerosis with dissecting aneurysm with or without hypertension in those over fifty years of age. This condition is usually associated with paresis or paralysis of the extremities on the side opposite to the headache and hemorrhage. The severe headache, rapid progression, elevated spinal fluid pressure, and blood in the spinal fluid help to distinguish this type of "stroke" from cerebral thrombosis or embolism.<sup>5</sup>

Percutaneous cerebral angiography, utilizing thirty-five percent urokon or hypaque will visualize the cerebral aneurysm or the displace-



FIGURE 1 Severe pain in one eye or forehead is often a sign of a bleeding aneurysm if associated with a weakness or paralysis of a 3rd nerve (oculomotor) as shown above. Nuchal rigidity and bloody spinal fluid establish a clinical diagnosis which is confirmed by cerebral angiography.

ment of cerebral vessels due to intracerebral hematoma.<sup>6</sup>

Treatment of cerebral aneurysms by ligation of the common or internal carotid artery in the neck is attended by a mortality rate of fifteen to twenty-five percent as against thirty-five to forty percent following intracranial ligation, according to most neurosurgeons. The mortality rate with non-surgical care is about fifty percent during the first attack but considerably higher during subsequent attacks.

The forehead pain or headache can be somewhat relieved with ice packs, aspirin or codeine ( $\frac{1}{4}$  to  $\frac{1}{2}$  gr.). Morphine, demerol, and similar narcotics should be avoided because of their depressant effect on respiration.

Occasionally, small doses of these drugs may be needed, but they should be ordered only as single doses and covered by an order cancelling the drug if the respirations drop below 16 per minute or if the patient becomes drowsy. If the pain becomes intolerable, massive rupture may be imminent and narcotics may mask this symptom which demands prompt surgery.

Hypothermia controlled by a skilled anesthetist may reduce severe headaches, bleeding and intracranial pressure and prepare the patient for angiography or surgery.

• *Postherpetic Pain*—The gasserian ganglion may be irritated by a virus infection which produces herpetic lesions along the cutaneous and mucosal areas supplied by the trigeminal nerve. The first or ophthalmic branch is frequently involved. The pain during the acute stage is often followed by a protracted period of severe burning pain that defies relief and drives the patient to narcotics or even suicide.

The following therapy has been reported as helpful during the first three or four days of the acute stage of the herpes but of dubious value thereafter:

1. X-ray therapy to the nerve root ganglion involved.
2. Achromycin 250 mgm. q.i.d.
3. Corticosteroids.
4. 10cc. whole blood intramuscularly in buttock every three days for three to five doses.

Ritchie Russell stresses full activity of the affected part if causalgia is to be avoided. He believes that the neuralgia which occurs after herpes zoster is especially present in those who are inactive and who over-protect the sensitive area.

As soon as the rash has healed, he recommends frequent massage with oil to the affected scalp and forehead, exercises to facial, scalp, and neck muscles and resumption of normal life as soon as possible.

In the chronic cases of herpes, he points out that there is often a mixture of sensory loss with areas which are so hyperesthetic that these patients are often frightened to wash or touch the scarred areas.

He insists that the first principle of treatment of these hyperesthetic areas of skin is activity, local rubbing, and full exposure to minor traumata of the patient's usual occupation.

He recommends the use of electric massagers applied lightly to the hyperesthetic area, and to hold it in one place for five to ten minutes every few hours. He believes this machine seems to have a powerful local anesthetic effect by direct physical trauma on nerve endings and has also the advantages of locally injected anesthetics without the disadvantages.<sup>23</sup>

Section of the posterior roots of the trigeminal nerve or carotid artery denervation, and cervical and thoracic sympathectomy are all useless in cases of postherpetic pain, as are most non-narcotic drugs. Some patients have been helped by psychosurgery.<sup>7, 8</sup>

Spiegel and Wycis reported relief of pain for more than one year in two cases following the production of small lesions in the thalamus and pain tracts in the mesencephalon with their stereotaxic apparatus.<sup>9</sup>

**GLOSSOPHARYNGEAL NEURALGIA** — Severe pain in the tonsillar area precipitated by yawning, swallowing or eating, with sharp, stabbing radiation deep in the ear. The attack may be cut short by cocaineization of the tonsillar area. There is no loss of sensation or motility in the nasopharynx. Section of the ninth cranial

(glossopharyngeal) nerve and at times part of the tenth cranial (vagus) nerve gives relief. This pain may stop spontaneously, and intracranial surgery should not be done unless the pain is unbearable, persistent for weeks and refractory to anodynes or medical therapy similar to that prescribed for tic douloureux.

**GENICULATE NEURALGIA**—This is a severe, agonizing pain deep in the ear. Talking, eating or swallowing does not produce the pain, and this finding distinguishes it from glossopharyngeal neuralgia. It may be brought on by touching the posterosuperior quadrant of the eardrum and this effect may be stopped by cocaineization of the eardrum. There is no ear infection.

Furlow found that the ear pain alone could be produced by intracranial stimulation of the intermedius nerve, whereas stimulation of the ninth cranial nerve caused pain in the throat with radiation into the ear but did not produce the ear pain alone. Intracranial section of the intermedius nerve gave permanent relief in the case reported by Furlow.<sup>10</sup>

Rosen in 1953 reported on two patients having severe ticlike ear pain which could be reproduced by direct stimulation of the chorda tympani nerve behind the eardrum. He called this pain *tic douloureux of the chorda tympani*. Section of the nerve at this point gave relief for two years. He has no follow-up on these patients since and he had no additional cases.<sup>11</sup>

If his results are confirmed, this relatively minor procedure would be preferable to intracranial section of the intermedius nerve (see above).

Occasionally, pain in the eardrum may be associated with a facial palsy, herpetic lesions on the drum and in the external auditory meatus, loss of taste and unusual sensitivity to noise. This syndrome is called *Hunt's neuralgia or the Ramsay Hunt syndrome*. The etiology may be a virus and the pain gradually subsides.

**NEURALGIA DUE TO MANDIBULAR JOINT DISEASE**—Costen described a syndrome affecting middle-aged and old people, particularly those who are edentulous, which consists of

aches about the ears, side of head and supraorbital area. These pains are frequently associated with burning sensations of the mucosa of the oropharynx and a dry mouth. He believes that these complaints are caused by pressure or abnormal movement of the condyles of the mandible about contiguous structures. The complaints are usually aggravated or precipitated by jaw movements, particularly by chewing tough substances, and are relieved by correction of malocclusion and by properly fitted dentures.<sup>12</sup> (Temporal or cranial arteritis must be excluded).

**TEMPORAL (CRANIAL) ARTERITIS**—This condition may cause, in addition to headache, severe pain in the anterior temporal area, particularly during mastication. The involvement may be limited to the temporal artery or other branches of the external carotid, or it may be part of systemic vascular disease. The etiology is unknown but some relation to infection and collagen disease is suspected.

Temporal (or, preferably cranial) arteritis occurs in the aged and the onset is gradual with symptoms that suggest systemic infection. In many instances, there is a history of cranial infection. The involved artery is swollen, often pulsates, and there are external signs of inflammation and exquisite tenderness to gentle palpation. Partial or complete loss of vision due to retinal arterial occlusion is common and often permanent, and cerebral symptoms such as contralateral paralysis may occur. The disease is said to be self-limited with recovery in many cases except for the visual loss. Periarteritis nodosa must be considered.

Antibiotics are ineffective in treatment of cranial arteritis. Salicylates are helpful for the pain. Corticotropin (ACTH<sup>®</sup>) and cortisone may give temporary dramatic relief but relapse occurs when they are discontinued. Infiltration about the involved vessel with procaine, local roentgen-ray therapy or resection of the artery may decrease local pain and headache.<sup>13</sup>

Shick has recently reviewed this problem. He suggests that the combined use of anti-coagulants and adrenal corticosteroids might be of value in patients who have had recent

impairment or loss of vision in one eye.<sup>24</sup>

**ORBITAL PERIOSTITIS**—Occasionally, a recurrent mild inflammation of the bony walls of the orbit may cause attacks of pain in the cheek or temple. The diagnosis may be made by local tenderness of the bone on deep pressure and roentgen signs of decreased calcium or periostitis. Antibiotic therapy may help.

**Glaucoma** should be ruled out if forehead pain is associated with ocular pain or visual complaints.

Occasionally, *pathology in the cervical spine* such as disc, osteophytic spurs, bone lesions, or even tumors can cause referred pain to the forehead (see section on nerve pathways). In such cases there are also symptoms, signs, and x-ray findings of cervical spine, nerve, or cord involvement.

One must also consider that forehead pain occurring after constant reading, anxiety, or a prolonged occupational posture of the head is as likely to come from the *neck muscles* as from ocular strain.

Ritchie Russell states that Kellgren (1939) showed that an irritating injection into the neck might produce frontal pain and that this test is of value in reproducing and modifying a great variety of head pains. The test consists of injecting 0.4 cu. cm. of six percent saline solution into a superficial suboccipital muscle and into the interspinous ligament. The effect is immediate and 2 cu. cm. of one percent procaine can be injected to remove the pain.

He states that when a long-standing pain can be both accelerated and then abolished by such a simple test, "the physical and psychological reactions are advantageous for therapy." Physiotherapy to the neck, change in posture habits, careful refraction or repeated injections of procaine may give relief.<sup>25</sup>

#### **Pain Syndromes of Comparable Symptomatology, Confused Terminology and Unknown Etiology**

**SPHENOPALATINE NEURALGIA (SLUDER'S NEURALGIA, LOWER-HALF HEADACHE)**—This is a unilateral severe pain of variable duration which occurs mainly at the root of the nose

and often radiates to the orbit. Occasionally, the pain spreads to the ear or to the back of the neck. It may be felt in both the upper and lower teeth. The attack is accompanied by nasal congestion and increased secretion of mucus on the involved side.

Stewart and Lambert studied seventy-three patients of lower-half headache and found that cocainization of the sphenopalatine ganglion gave "relief" in only forty-three; alcohol injections relieved the pain in fifteen and gave incomplete or no relief in another fifteen patients.<sup>24</sup> Eagle believes that a septal spur or deviation may be the cause of irritation and claims that the removal of these defects is the most efficient way to treat this condition.<sup>14</sup>

**VIDIAN NEURALGIA**—Vail describes a syndrome similar to sphenopalatine neuralgia and claims that it is caused by infection of the vidian nerve (formed by the greater superficial petrosal nerve (parasympathetic) and the deep petrosal nerve (sympathetic) as it lies in the wall of the sphenoid sinus. He suggests that in such cases investigation of the sinus may bring out important information. Ray stimulated the mucosa of the sphenoid sinus in one patient and this resulted in pain only on the top of the head. However, he did not specifically stimulate the vidian nerve.<sup>15</sup>

**ATYPICAL FACIAL NEURALGIA**—This syndrome was described by Glaser in 1928<sup>16</sup> and by Fay in 1932.<sup>17</sup> It consists of a deep, aching, boring or throbbing, and at times burning unilateral pain in or behind the eye, in the upper nose and the upper and lower jaws, about the ear, in the suboccipital area and neck and even in the shoulder. Fay called the pain "carotidynia." He could aggravate or reproduce it by moderate stroking pressure against the upper part of the common carotid artery on the involved side. He believed that atypical facial neuralgia is caused by irritation of the external carotid artery and its branches resulting from infection in the throat, mouth, gums or teeth. Wolf believes that the internal maxillary artery and its branches are primarily involved in this syndrome.

**HISTAMINIC CEPHALGALGIA**—This syndrome,

which has been described by Horton,<sup>18</sup> involves facial pain and, therefore, must be included here. One should note the similarity of the symptoms in this syndrome with those of atypical facial neuralgia and sphenopalatine neuralgia.

According to Horton, the pain is unilateral and of a severe burning and boring character and may affect the eyes, temple, face, upper or lower teeth, neck and even the shoulder. The condition often begins after middle age. The pain occurs suddenly frequently awakening the patient at night, and may also subside suddenly; it rarely lasts more than an hour. Lacrimation, congestion of the conjunctiva, excessive watery discharge from the nose, and nasal obstruction occur, usually on the involved side. Perspiration is evident on the forehead over the painful eye. Dilatation of the temporal artery may be visible.

Horton believes that the nocturnal occurrence of histaminic cephalgias is important in diagnosis. He states that the subcutaneous injection of 0.35mg. of histamine base will produce a typical attack within one hour in a susceptible person but will produce only a generalized headache in a normal person. Histaminic cephalgias as well as the headache resulting from a histamine injection can be relieved promptly by the intravenous injection of epinephrine in a 1:400,000 dilution. Horton attributes the pain to dilatation of branches of the external carotid artery caused by hypersensitivity to histamine. He distinguishes it from migraine by the lack of a hereditary background and of scotoma, the acute onset and the frequent nocturnal appearance.<sup>18</sup>

Wolf, however, believes that histaminic cephalgias is closely related to true migraine headaches and, like migraine, should be considered as one of the many varieties of painful vascular disorders of the head: "The attacks occur in situations of emotional tension and are precipitated by vasodilator agents, notably alcohol and histamine. They respond promptly to vasoconstrictors given intravenously or intramuscularly, the most effective being ergotamine tartrate."<sup>14</sup>

TABLE I DIAGNOSTIC STUDIES IN INTRACTABLE FACIAL PAIN

- Repeated history-taking and systemic examination.
- Neurological examination, including eye grounds and spinal fluid.
- Oronasopharyngeal and sinus examination.
- Dental evaluation.
- Roentgenographic studies — stereoscopic views of skull (anteroposterior, posteroanterior and lateral) and base of skull, paranasal sinuses, facial bones, teeth and alveoli, temporomandibular joints, heart, chest and mediastinum as indicated.
- Basic laboratory studies.
- Studies to rule out infection—white cell and differential counts, sedimentation rate, cultures from teeth, gums, sinus secretions, nasopharynx and throat, blood cultures.
- Studies to rule out intracranial tumors, aneurysms or intracerebral hemorrhage (hematoma) — stereoscopic roentgenograms of the skull for erosion of bone, calcified masses or pineal shift, electroencephalography, cerebral angiography to visualize aneurysms or displacement of arteries by hematoma or tumor, air contrast studies (encephalography or ventriculography for tumors).
- Psychiatric opinion—May help in evaluation and management of some patients.

It appears likely that the facial pain of the four syndromes described above is probably due to direct or indirect involvement of some or all of the branches of the external carotid artery. The etiology, however, is not known. Eagle implicates nasal spurs or deviated septum. Vail claims infection of the sphenoid sinus. Fay argues for infection in the throat, mouth, alveoli and teeth. Horton champions histamine. Wolf is not convinced that histamine is the responsible local vasodilator agent. These varying opinions result in confusion with regard to diagnosis and treatment.

The pain in all these syndromes is severe and frequently unbearable; in some cases, if not relieved, it leads the patient to narcotic addiction, suicide or to cultists. The vague etiology should not prevent physicians from

using what is known to help these patients. Repeated re-evaluation of the patient's history and re-examination will help to rule out tic douloureux, glaucoma, infection, and tumors of the teeth, mouth, nasopharynx, sinuses, ears, neck and intracranial structures. These conditions are known causes of facial pain and can be helped by alcohol block, surgery, dental, or ocular care, antibiotics and x-ray therapy.

One should look for systemic conditions, infections or vascular disease that could sensitize or irritate the branches of the external carotid artery. Heart disease, angina pectoris, or irritation of the great vessels in the mediastinum or neck can project pain into the jaws, teeth and face. Diseases involving the blood vessels, such as arteritis (including cranial arteritis), periarthritis nodosa and rheumatic fever can produce facial pain.

#### Diagnostic Studies

The diagnostic studies listed in the Table I, are suggested as a guide for a complete survey in cases of intractable facial pain. It is obvious that in many instances such a complete survey will be unnecessary.

#### Treatment

Although the etiology of these atypical facial neuralgias is obscure; it is believed that the trigger mechanism in some instances is emotional stress; the severe pain continues the cycle.

Any medical therapy must include common sense and office psychotherapy, augmented, if necessary, by formal psychiatric aid. The patient should have regular hours for eating and sleeping. Moderation should keynote all activities. The following therapy similar to that for migraine headache may help some patients. Combinations of sedatives or tranquilizers in moderate dosage given every four or six hours during the day for five days, then stopped for 48 hours and then repeated as necessary may allay anxiety and diminish the number of attacks. Cafergot® (1 mg. of ergotamine tartrate and 100 mg. of caffeine alkaloid per tab-

let) may stop severe attacks. The initial dose is two tablets, followed by one tablet one-half hour later if the attack has not subsided; another tablet is taken every half hour until relief is obtained or until the daily dosage limit of six tablets is reached. Cafergot is not recommended for use between attacks and is contraindicated in the presence of peripheral vascular disease, angina pectoris, impaired renal and hepatic function, and pregnancy.

Sudden severe attacks of atypical facial neuralgia in some cases can be relieved by the intravenous injection of 1cc. of dihydro-ergotamine (DHE45). Codeine, Darvon®, morphine, Demerol® hydrochloride or other narcotics should be avoided for obvious reasons. This is frequently impossible, and the decision for their use will tax the physician's judgment.

Whiskey, 30cc. (1 oz.), with aspirin, 600 mg. (10 gr.) repeated every two to three hours for a maximum of three doses in a twelve-hour period may relieve pain and produce a sense of well being. This therapy is most practical after the patient's working hours.

The patient should be given the benefit of histamine desensitization if he shows sensitivity to the histamine test or is refractory to other treatments. For histamine desensitization, Horton starts with a subcutaneous injection of 0.05cc. of histamine diphasphate solution with a second injection given six to eight hours later. Each cubic centimeter of the solution contains 0.275mg. of the drug. Two injections are given daily and the amount of each injection is increased by 0.05cc. until a dosage of 0.50cc. is reached twice daily.

The aggravation or production of symptoms during the treatment suggests sensitization rather than desensitization, and the dose producing this effect should be reduced fifty percent. The 0.05cc. increments are then continued to a point just below that which brings on the symptoms. This amount is used as the maintenance dose and is continued daily for an indefinite time, which varies in each patient.

If severe symptoms recur, Horton advocates use of whole cortical extract or cortisone before

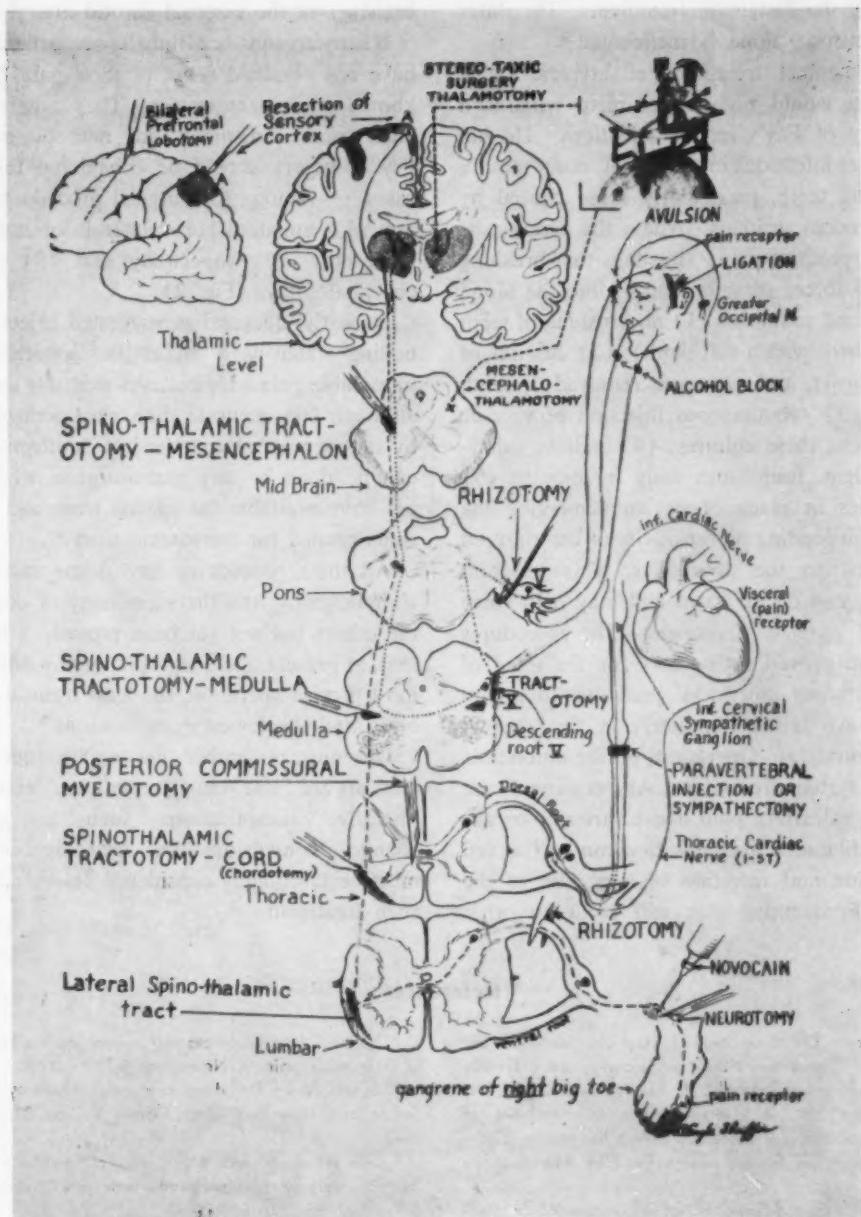


FIGURE 2 Neurosurgical procedures for the relief of intractable pain including that of the face (see text).<sup>(25)</sup>

resuming the histamine treatments. He states that cortisone alone is ineffectual.<sup>18</sup>

The medical treatment of atypical facial neuralgia would not be complete without a summary of Fay's recommendations. He believes that infections in the throat, nose, mouth, gums and teeth, particularly those caused by *Streptococcus viridans*, irritate the blood vessels and produce pain. He states that brushing the teeth forces these organisms into the blood stream, and advocates (1) no brushing of teeth (clean them with a soft cloth); (2) cultures of gums, throat, and any tooth removed or tooth socket; (3) subcutaneous injection of vaccine made from these cultures; (4) sodium salicylate, 1.0gm. four times daily by mouth; (5) antibiotics in place of or supplementing the vaccine depending on sensitivity of the cultured organisms to the antibiotics. This program certainly can do no harm and may help some patients. *Surgical Treatment*—The procedures that have proved satisfactory for the relief of tic douloureux and facial pain due to malignancy have failed completely in the atypical facial neuralgias. Operations on the autonomic nervous system are useless. An occasional case of temporal artery pain due to arteritis or abnormal dilatation and pulsation can be relieved by ligation and resection of a portion of the artery. Frequently, pain will recur in other

branches of the external carotid artery.

Neurosurgeons occasionally see patients who have not obtained relief of their pain by any known medical treatment. They are haggard and worn, and many are narcotic addicts. Psychosurgery should be considered for such cases.<sup>7, 8</sup> Among the surgical procedures used are (1) unilateral or bilateral lobotomy or leukotomy, (2) topectomy and (3) stereotactic encephalotomy. (Fig. 2)

Recently, Jaeger has suggested injection of boiling water as a method of lobotomy for intractable pain. He believes that this method, although less accurate than electrocoagulation by stereotactic encephalotomy is just as effective and can be done by any neurosurgeon who does not have available the special team and apparatus needed for stereotaxic work.<sup>22</sup>

All these procedures have some merit and complications, and the superiority of one over the others has not yet been proved. I believe that, at present, stereotactic encephalotomy offers the most precise operation, the least trauma to the brain and the fewest complications.<sup>9</sup>

One must remember that psychosurgical operations are "last resort procedures," and post-operative complications such as mental changes, convulsions and neurologic deficits must be thoroughly considered before advising such treatment.

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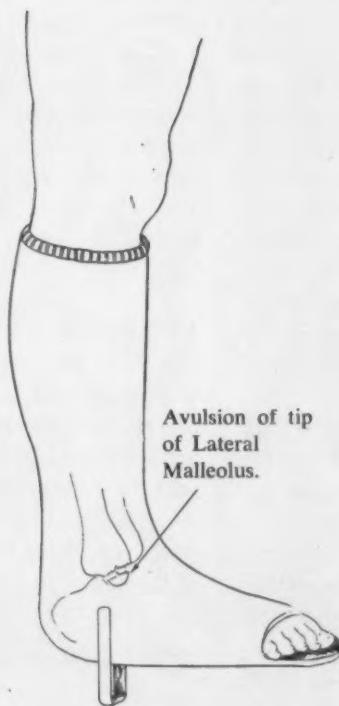
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#### CLINI-CLIPPING

##### Low-leg Walking Cast.



# MORNING HEADACHE

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**I**t is well established that eighty-five percent of all attacks of migraines and histaminic cephalgia are terminated by the proper use of ergotamine tartrate and combinations thereof. The effectiveness of these ergot preparations is greatest when they are administered in adequate amounts and most important, early during the course of the attack.<sup>1, 2</sup>

The importance of early administration is based on the fact that the mechanisms involved in a vascular headache start with vasoconstriction of cerebral arteries, that this then gives way to vasodilatation and finally to edema. It has been demonstrated conclusively that ergotamine acts by reducing the amplitude of pulsation in the external carotid artery during the vasodilatation phase and that if this is left unchecked and edema sets in, the vessels become rigid and refractory to therapy.<sup>3</sup>

Though this problem of timing arises all too often, even when these attacks occur during the daytime, one can readily appreciate the difficulty in treating a headache which arises while the patient is sleeping. It is these nocturnal or early morning headaches which constitute a therapeutic challenge, and their response to a regimen we have instituted has been sufficiently encouraging to prompt us to report our findings.

Lescher<sup>4</sup> made the observation that ergota-

mine tartrate, taken with phenobarbital at bedtime, was successful in preventing migraine headache from beginning during the night or in the morning. In our experience, we found that injection of 0.25 mgm. of ergotamine tartrate or 0.50 mgm. of dihydroergotamine at bedtime prevented the expected attack of histaminic cephalgia from occurring during the night in several of our patients. More recently, we have employed Cafergot® and Cafergot PB® tablets or suppositories at bedtime in an effort to block the vascular progression from developing while the patient is asleep. The following case reports are presented in some detail to illustrate the preventive role of ergotamine.

## Case Reports

- CASE No. 1—*R. C.*, a 42-year-old railway clerk, was first seen at the clinic\* on March 28, 1947. He related a history of headaches since the age of 12. These had occurred only once a month initially, but lately had increased in frequency and were experienced almost every day. Their onset was at any time of the day or night, even awakening him from

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a sound sleep. He described the pain as a severe, throbbing, burning sensation, occurring on either side of the head, rarely bilaterally. This radiated to the temple and the homolateral nostril, and was associated with flushing of the face, nausea and vomiting. Untreated, each attack persisted for fifteen to eighteen hours, and would completely incapacitate him. Symptomatic treatment with 0.25 mgm. ergotamine tartrate or 1 mgm. dihydroergotamine by subcutaneous injection consistently relieved the headache within two hours. However, nausea and vomiting were at times provoked and followed by pain and a drawing sensation in the legs and scrotum.

Physical examination was completely normal, except for grade 1 arteriosclerotic changes in the retinal vessels. A thorough neurologic evaluation, including x-ray examinations of the skull and cervical spine, revealed no abnormality.

Various forms of treatment had been employed for the acute attacks of headache throughout the years, but, the only consistent results obtained were with the ergot preparations. As Cafergot and then Cafergot PB tablets and suppositories became available, each was given a thorough trial in turn, and found to be quite effective, especially when administered early in the attack.

In addition to treatment of the acute attacks, many attempts were made to prevent them. These consisted of psychotherapy, histamine desensitization, ataractics, sedation, physical therapy, and various antihistamine preparations, none of which prevented daily recurrence of headache.

During 1948, 1949, and 1950, potassium thiocyanate therapy was employed. When the blood level was kept between 8 and 12 mg.%, the patient would be free of headaches for weeks at a time. However, this therapy had to be abandoned in 1950 because of progressive enlargement of his thyroid gland, the thiocyanate apparently acting as a goitrogenic agent. Within several weeks after discontinuation of the thiocyanate therapy, all symptoms of goitre disappeared, but his headache re-

appeared, predominantly in the early morning hours or upon arising.

As larger and larger doses of Cafergot were required to control these morning headaches, it was decided in 1951, to administer one Cafergot tablet as prophylaxis at bedtime. Since that time, he has been much improved, a status maintained since 1956 with one Cafergot PB tablet, taken at bedtime. He now experiences a less severe headache only once every three or four weeks, and when it occurs, it responds to the analgesic-sedative, Fiorinal.® Complete physical and laboratory examinations at yearly intervals have revealed him to be in excellent general condition, and free from any signs of ergot toxicity.

• CASE NO. 2—*G. F.*, a 22-year-old white male railroad employee was first seen at the headache clinic on December 17, 1957, with the chief complaint of recurrent headache since 1951. At first they had occurred infrequently but during recent months appeared daily, and often two or three times a day. The usual onset was at about 5 a.m., when he would waken from a sound sleep with a severe throbbing pain over his right temple, associated with a hot flushed feeling all over his head. The right eye teared profusely, the right side of the nose was stuffy and considerable rhinorrhea was present. Each attack would last one to two hours and gradually recede. In the terminal stage he noticed a definite chill and weakness.

Physical examination, x-ray examination of skull, sinuses, and cervical spine, laboratory studies, and fluoroscopy failed to reveal any abnormality. Histamine skin test was markedly positive, and even though performed with only 0.1 cc. of a solution containing 0.275 mgm. histamine diphosphate per cc., this dose was enough to produce a typical histamine headache of short duration. The history and the physical appearance during the provoked attack supported a diagnosis of histaminic cephalgia.

Previous to his examination at the Headache Clinic, Cafergot tablets had been employed on several occasions for the acute at-

tacks, but without relief. However, he had never taken more than two tablets for an attack and from our experience, this amount is often insufficient to relieve an attack of histaminic cephalgia, once it has begun.

Because his severe attacks occurred during the early morning hours, he was advised to take one Cafergot PB tablet at bedtime, on the premise that its vasoconstrictor effect would prevent the attack from developing. He was also advised to sleep with the head of his bed elevated at least eight inches higher than the foot, in order to prevent congestion in and about his head while he slept.

In addition, histamine desensitization was undertaken through subcutaneous injections of histamine twice daily. Dosage was started at 0.25 cc., and gradually increased daily until he noticed a slight flush several minutes after injection at a dose of 0.5 cc. Adhering to this regimen and taking a Cafergot PB tablet at bedtime, he slept well and did not experience headache. Each time he neglected to take the medication, he awoke with a headache during the night. These gradually became less severe and at the end of two months of histamine therapy, he was able to discontinue the Cafergot PB tablets. At the present time, he is continuing with histamine injections once daily, and is relatively free from headache. An occasional attack that occurs while he is up and about during the day is relieved within fifteen to twenty minutes by one Cafergot tablet.

This is a typical case of histamine cephalgia, in which the response to subcutaneous histamine therapy was excellent, but there was a period of six to eight weeks before desensitization was accomplished. During this period, uninterrupted sleep and prevention of nocturnal attacks were insured by taking one Cafergot PB tablet at bedtime.

• CASE NO. 3—*Mrs. V. P.*, housewife, age 33, was first seen in October 1952. Her chief complaint was headache of indefinite duration (as long as she could remember). Headaches occur as often as four times a week, beginning as a slight pain, present on arising in the morning and building up in intensity during the

day. Occasionally she is awakened during the early morning hours by a throbbing pain in the temple. At times, this is precipitated by leaning forward. The initial warning symptom of headache consists of a stiff sensation at the back of the neck, which progresses to a pain in the occiput, and radiates into both temples. At the peak of the headache, her vision is blurred, pain is severe and throbbing in nature, and is associated with difficulty in concentration and coordination of word and thought. Such a severe headache occurs once or twice a month. Prior to her menstrual period she experiences a dull headache throughout the early part of the day. She also admits to being under considerable nervous strain. Anorexia and nausea, but no vomiting, are present during the attacks.

Physical examination including eye, ear, nose and throat, chest and abdomen was negative, as was the neurological examination. Pelvic examination revealed nothing abnormal except for minimal endocervicitis.

X-rays (A.P. and lateral) of skull and cervical spine were negative. X-rays of sinuses negative, except for moderately hazy right antrum. Fluoroscopic examination of the gastrointestinal tract, heart and lung was essentially negative.

Based on patient's history and negative physical findings, a diagnosis of vascular headache associated with tension was made.

Shortly thereafter, the patient was seen during an episode of acute headache. One cc. of dihydroergotamine 45 was injected intravenously and gave complete relief within a half hour. This satisfactory response to ergot therapy prompted us to prescribe Cafergot tablets. She was directed to take two tablets at the first sign of headache (in her case, a feeling of stiffness in the back of the neck), followed by one tablet every half hour if necessary until relieved, but not to exceed six tablets.

The patient was also placed on a combination of nicotinic acid plus antihistamine four times daily as prophylaxis. She reported that she was still subject to the severe headaches, approximately twice a month, but that they

consistently responded to Cafergot within two hours.

The patient was not seen from January 1953 until June 1956. Her records note that headaches had diminished in frequency to a point where she had not had a headache for two years. However, she returned to the clinic in June 1956, stating that she had been subject to severe headaches since January of that year, and that these were essentially the same as those reported when she was first seen. A survey of seasonal pollens by skin test was completely negative, and a skin test with histamine showed only a mild reaction.

She was followed closely from June 1956 until November 1957, during which the previously described management again decreased the frequency and severity of her headaches.

Then, in November 1957, she had a series of headaches which did not respond to the prescribed treatment. Discussions with her revealed that the mornings she awoke with headaches were on those days when she anticipated difficult situations ahead.

In December 1957, the patient was started on one Cafergot PB suppository at bedtime each night. After three days of this routine, she reported that not only had her morning headaches been prevented but that the stiffness in the neck had disappeared. From December 1957 until April 1958, she experienced only three severe headaches. One was in December following consumption of alcohol, to which she was unaccustomed. One was in February, during an episode of acute depression and the other in March during an attack of acute sinusitis.

In April, therapy was discontinued when the patient reported much improvement. A moderately severe headache occurs about once a month and responds readily to a Cafergot PB suppository.

• CASE NO. 4—*Mr. W. G.*, a 36-year-old sheet metal worker, was first seen in May 1957. He had been suffering severe and frequent morning headaches for four years, and these had become more intense during the past three years. Three years ago, his physician had pre-

scribed Cafergot tablets, and these reduced the frequency of attacks from twice weekly to one headache every three weeks. In the past year, they had again become more frequent, until he was experiencing attacks two or three times a week, forcing him to lose on an average, one day's work a week. Headaches were always unilateral, located over either eye. Pain was throbbing in nature and frequently accompanied by nausea and occasionally by vomiting. He noticed that the headaches were more frequent in hot weather and seemed to be aggravated by fatigue, excessive concentration or worry.

Complete physical examination was within normal limits. X-rays of skull were negative. Blood studies were essentially normal. A provocative test with histamine was negative.

A diagnosis of migraine headache was made. The patient was placed on a program of nicotinic acid in flushing doses, plus the use of Fiorinal tablets for dull headaches and Cafergot PB suppositories for severe headaches.

The patient was followed closely during the months from May to August, and an accurate record of frequency and severity of attacks was kept. By actual count, there were three severe headaches a week during this period. Some were sufficiently incapacitating to necessitate absence from his work. Those occurring on weekends were relieved within one to two hours by Cafergot PB suppositories. Occasionally codeine plus salicylates were also required.

In October 1957, the patient was placed on a program of one Cafergot PB suppository every night at bedtime. The record-keeping continued and showed that not one morning headache had been experienced during a three month period. Headaches have occurred in the late afternoon or evening at the rate of approximately one a week, and these have been relieved consistently with a Cafergot PB suppository. No workdays have been lost during this period. In January 1958, his employer's business failed, and this resulted in unemployment for the patient, and cessation of all medication because of financial difficulties. When he returned in February, 1958, he reported

that he had had severe headaches on January 4, 6 to 10, 15, 19, 25, 29, and 30. A supply of Cafergot PB suppositories was made available to the patient, and he was advised to continue taking one each night at bedtime. With this routine the patient has averaged only one headache a month to the present date. Thorough physical examinations at periodic intervals have revealed no evidence of ergot toxicity.

• CASE No. 5—*Mrs. R. C.*, 25-year-old white female, housewife and mother of two children, first consulted us in October 1958, with the complaint of chronic recurring headaches. Earlier she experienced an attack every two to four weeks, but in recent months occurred at least once a week. Attacks usually began in the morning, rarely during the day. They started over the right eye, spread to the right temple and radiated to other parts of the head. They never started on the left side. Throbbing, photophobia or scotomata were not experienced but there was occasional blurred vision. The day before the headache, she felt "strange" and "different" as if something was amiss. The attacks lasted one or two days, were accompanied by considerable nausea and vomiting and some vertigo and staggering. She tried to go to bed to "sleep them off," but each attack left her "washed out" the next day. The only other significant history was complaint of mild depression and nervous tension before her periods. However, the headaches had no relation to her periods. In the past, many medications had been prescribed for her and seemed to give her relief for a time, but then became ineffective.

Thorough physical examination and extensive laboratory studies were negative, as were x-rays of skull and cervical spine.

A diagnosis of migraine headache was made, and several lengthy and detailed discussions were held with the patient in an attempt to explain the pathophysiology involved and to prescribe a more hygienic mode of life for her. She was advised to sleep with the head of her bed elevated, and to reduce her salt intake so as to prevent congestion of blood in the head.

Mild sedation was prescribed, as needed, for her nervous tension. She was also advised to take one Cafergot PB tablet at bedtime.

The patient has improved markedly on this routine. She has had several headaches precipitated by strain, fatigue of housework, shopping or children's illnesses, but she is now able to correlate cause and effect of headache. She also finds that she awakes clear-headed practically every morning. When she does have a headache, two to four Cafergot PB tablets abort these attacks promptly.

• CASE No. 6—*Mrs. M. Z.*, 49-year-old white housewife, first seen by us in October 1958, gave a history of headache since her third pregnancy (1935). They have gradually increased in severity and in recent years she has rarely been free of pain. She has been using dihydroergotamine for several years with varying degrees of success. Even though she might retire at night feeling fairly comfortable, she awakens from her sleep two or three mornings a week with severe headache. During the past two years, menstrual periods have been irregular. In addition to headache, she complained of bouts of flushes and paresthesias of the fingers and toes, suggestive of the menopause. One interesting observation is the fact that she often has severe nightmares, disturbed sleep or other uncomfortable dreams the night before a headache begins.

Complete physical examination, including laboratory studies, x-ray examination of skull and cervical spine, electrocardiographic studies, proctoscopic examination and fluoroscopy of the entire gastrointestinal tract was negative. Pelvic and vaginal smears for cancer were completely normal, but glandular evaluation showed considerable estrogen deficiency. Histamine skin test was moderately positive. A histamine provocative test produced a dull, heavy feeling in the head, but no typical headache.

Therapy consisted of psychotherapy, in which a more hygienic mode of living was outlined, in order to prevent extremes of exhaustion and fatigue. Cyclic ovarian hormone administration has relieved her of the above-described menopausal symptoms with no exa-

cerbation of her menstrual flow. She was advised to sleep with the head of her bed elevated, follow a low salt diet, keep her bowels regular and to take a Cafergot PB tablet at bedtime.

Since adopting this regimen, headaches have been reduced by ninety percent and those that do occur are completely relieved by injections of 1 cc. dihydroergotamine.

### Discussion

The cases described here illustrate the value of employing Cafergot or Cafergot PB at bedtime to prevent nocturnal or early-morning attacks of vascular headache. The times of onset of some of these headaches are characteristic of histaminic cephalgia,<sup>5, 6</sup> which has also been described as "cluster headache,"<sup>7, 8</sup> and as "a particular variety of headache," while others demonstrate characteristics of migraine.

The heavy, congested feeling in the head experienced by these patients in the morning is the one feature common to these headaches. This is a sequel to the attack or may even occur when the vascular progression does not culminate in headache per se. It appears to us that this warrants the use of the term "Morning Headache" as a means of identification, but it should not be inferred that a new headache entity is being reported. Rather, we are trying to focus attention on the early-morning distress, and conversely, the clearheadedness which is obtained with this application of Cafergot and Cafergot PB.

Symonds<sup>9</sup> has reported on his successful use of ergotamine tartrate by intramuscular injection at bedtime as a means of preventing nocturnal headache. He has also extended this to morning administration where an attack was

apt to occur both during the night and day. This preventive regimen was geared to the appearance of these attacks, which tend to occur in bouts or clusters.

Mindful of the difficulties attendant to self-injection,<sup>10</sup> we have prescribed Cafergot or Cafergot PB at bedtime and have been impressed with the value of these preparations in warding-off anticipated attacks of headache that may arise during the night or early in the morning. One tablet or suppository of either of these preparations used at bedtime has proved to be comparable to Gynergen® in degree of effectiveness, and moreover, has the decided advantage of being a practical and easy method of administration. It is quite likely that the sedation afforded by the sodium pentobarbital contained in Cafergot PB makes this preparation more useful in such cases.

This preventive application of these preparations is a departure from their accepted use as symptomatic treatment. Accordingly, good judgment must be exercised in seeking a balance between control of headaches and the amount of ergot consumed. The consensus of qualified investigators<sup>11-12</sup> is that many patients are able to tolerate larger quantities of ergot without toxicity than is generally recognized. This is not to suggest a 'aissez-faire attitude, but rather to focus attention on the relief that judicious use of this alkaloid can bring to suffering patients. In simple terms, this can be likened to the adage, "A stitch in time saves nine," for it may entail the use of less ergot than would be required to treat the attacks that would otherwise occur. In our experience we have found this to be true<sup>14</sup> and believe that this preventive use of ergotamine has merit and can prove to be a boon to many patients.

### Summary

Several case reports have been reviewed to document the pre-headache use of ergotamine tartrate. These have shown that Cafergot® and Cafergot PB® tablets or suppositories,

administered at bedtime, are effective in preventing the onset of nocturnal or early-morning vascular headache.

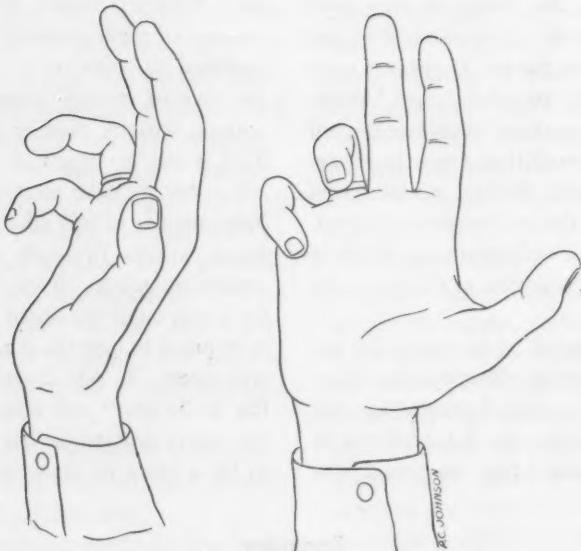
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## CLINI-CLIPPING



Claw Deformity Due to Ulnar Nerve Lesion.

# The EEG and Headache

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The purpose of this article is to acquaint the practicing physician with the possibilities of electroencephalography in helping him distinguish specific types from the rather general—common—complaint, "headache," so that he may render more specific and intelligent treatment. We have deliberately omitted organic headaches caused by neoplastic processes of all types, hypertension, ophthalmological disease, and any other type of organic head pains which are readily diagnosed by other means.

## Headache in Migraine

For electroencephalographic purposes, a set of criteria must be set for the symptom complex which we call "migraine."

Dow and Whitty,<sup>1</sup> in 1947, suggested the following criteria, of which three out of five must be present before the positive diagnosis of hereditary migraine could be considered acceptable.

- Onset before age 25, with no irreversible neurological signs for at least three years.
- The presence of a pre-headache phase ("aura") of transient visual field change or paresthesias, or motor weakness of monoplegic distribution; or psychic change, or combinations of these; all of which are stereotyped and repetitive with each attack.

● Hemicranial distribution of pain at some stage of its course.

● Amelioration by vasoconstrictor drugs or by methodical occlusion of carotid artery or its branches.

● Association with nausea or vomiting.

The authors using these criteria reported thirty out of fifty-one patients with abnormal records in the electroencephalograph, which constitutes about sixty percent of their patients. This is out of proportion to the ten percent of abnormal readings found in the normal population. Out of the thirty patients having abnormal readings, there were twenty-one who had positive tracings for migraine according to their interpretations.

## Epilepsy and Migraine Headache

Epilepsy has at times been linked with migraine, but an exhaustive review and study by Pintus and Inghirami<sup>2</sup> in 1955, covering the period in world literature from 1941 to 1955, indicates that the two diseases are genetically different and the two can exist in the same patient coincidentally and independently. The electroencephalogram in their opinion taken on migraine patients is not epileptic in type and their electroencephalograms were taken during attacks of migraine headache and between attacks. The electroencephalogram showed either high voltage or slow frequency or combinations of both in most hereditary migraine patients; while only infrequently in non-hereditary migraine. Further refutation of the "epilepsy-like" irritation as the mechanism of migraine was contained in the report by Bartschi and Rochaix,<sup>3</sup> in 1955. They felt that the bursts of slow waves did not correspond with cortical anomalies of an irritative or a destructive character. It was also their further opinion that vascular changes were responsible for the dominant role of pathophysiology of migraine and that various sections of the brain showed varying sensitivities to anoxia with the visual areas being the most sensitive. Furthermore they

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said that exaggeration of the abnormal waves on the tracing caused by barbiturates, cardiazole, or light flicking, did not enhance or bring out focal irritation on the electroencephalogram as they do in epilepsy.

Riser, et al<sup>4</sup> say that the non-activated (exaggerated) electroencephalograms in migraine show no truly epileptic characteristics, but that activation with cardiazole in some patients leads to typical epileptic tracings. As far as relationship between migraine and epilepsy are concerned, they feel that the two are associated, but the admitted coexistence of the two does not necessarily make them identical; although there may be instances in which there is a "chain" between the two. The similarity of migraine and epilepsy from the clinical point of view can be found in the auras preceding the onset of sensory and motor phenomenon, and in some patients the post-crises lassitude. They do agree with Bartschi's and Rochaix's<sup>5</sup> theory that vascular spasm produces cortical anemia in migraine, although Riser holds that vascular spasm is the mechanism in many instances of epilepsy. (This is not universally accepted.) In general, although these authors<sup>5</sup> feel there is a direct relationship from the electroencephalographic point of view, they cannot give too precise findings. These authors feel that migraine must be divided into three types from the standpoint of organic change as evidenced by EEG tracing alterations.

- Migraine without epilepsy in which obvious disturbances occur in the tracings.
- Migraine crises followed immediately by epileptic ones, with the two syndromes interwoven.
- Alternate migraine and epilepsy, with the crises separated from each other.

Riser's conclusion indicates that migraine is not identical with epilepsy but has a common ground with it, and in some instances may indicate a predisposition to epilepsy. According to Bartschi and Rochaix, the electroencephalogram shows most frequently asymmetry of normal alpha activity over both hemispheres. During the hemianoptic state of prodromal symptoms however, they found contralateral

occipital EEG changes. They also found that histamine, in some instances, will produce migraine activity in the electroencephalogram. This can also be reproduced with histamine in some normals. Weil,<sup>6</sup> on the other hand records in twenty-six percent of his patients having dysrhythmic (hereditary) migraine, high-voltage-slow-paroxysmal tracings, half of which are focal and half diffuse. The remaining seventy-four percent had borderline to minimal irregularities, but he did not consider these as abnormal electroencephalograms. Seventy percent of the patients studied by Panzani and Boyer<sup>6</sup> showed abnormal electroencephalograms, of which two-thirds were diffuse and one-third focal. Thirty percent of the electroencephalograms were recorded as normal in this group. As you can see, the percentages are approximately reverse for the above two studies, but this is most probably the result of the interpretation of what is considered normal and abnormal. Inghirami<sup>7</sup> found seventy-five percent of abnormal tracings in his series of twenty patients with migraine. He did not select patients on the basis of a history of hereditary or non-hereditary type by their electroencephalograms. According to his findings, hereditary migraine has a tendency to have slow components with hyperactivity interspersed, while in the non-hereditary type they are dysynchronous. Masciocchi and Savoldi<sup>8</sup> found sixty-one percent of abnormal tracings and thirty-nine percent of normal tracings in patients with migraine symptoms. Krischek,<sup>9</sup> in his series of seventy-four patients, concludes that the electroencephalogram in most instances of migraine is within normal limits and that there is no significant difference between the tracing at the time of the attack and tracings between attacks; and that there is no relationship between severity of migraine and electroencephalographic findings. The only characteristic change (according to Krischek) on the electroencephalogram is mild unilateral reduction in the alpha rhythms occurring on the contralateral side to the headache. However

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in breaking down his figures we find that fifteen of his seventy-four patients had normal electroencephalograms, forty-six had slow deviations, and thirteen had tracings which could not be considered normal. Lugaresi<sup>10</sup> cites Cohen (1949) and Ulett (1952), who reported abnormal tracings in fifteen to twenty percent of patients suffering from headache. He then reported on a series of fifteen patients having monosymptomatic headache in the absence of other organic disease, thirty percent of whom had normal tracings, while the remainder had borderline to grossly abnormal tracings. Strauss and Selinsky<sup>11</sup> in 1941 showed slowing of normal waves to five to seven per second by hyperventilating during headache only and suggest that the abnormal electroencephalogram during the "headache free interval," may suggest the presence of an additional disorder of organic nature such as epilepsies or behavioral disorders.

It is possible that the ones that were reported in Weil's group fell into this category, because he stated these patients received relief of migraine symptoms from the administration of anticonvulsants and this opinion was substantiated later by Panzani and Boyer who also agreed that patients having migraine with abnormally slow electroencephalograms should be treated with anticonvulsants.

#### **Headache and Trauma**

In discussing headache and trauma, we present first those patients who did not have visible organic damage which could be diagnosed by other means, such as headache due to a fractured skull, hemorrhage, etc., all of whom had negative x-ray, spinal fluid and eye findings, as well as negative neurological examination and no signs of localization.

According to Lugaresi<sup>10</sup> fifty percent of his post-traumatic patients that were in this category had normal electroencephalograms, twenty-five percent had borderline electroencephalograms, and twenty-five percent had abnormal tracings. Strauss, Ostow and Greenstein<sup>12</sup> reported forty percent of the patients in their series that had no signs of cerebral damage had abnormal electroencephalograms. In these people the abnormal electroencephalogram alone demonstrated unequivocal impairment of cerebral function. Ross and McNaughton<sup>13</sup> did a controlled study and found no difference between post-traumatic electroencephalograms in patients with or without headache. This suggests that any changes in the electroencephalograms after trauma, other than macroscopic damage diagnosed by other means, reveals electro-potential changes of altered physiology due to the trauma but, that the tracing cannot predict the presence of symptoms or visa versa. This however confirms that the EEG does reveal injury with or without symptoms in about fifty percent of the cases of head injury even without signs of cerebral damage. Schuleman<sup>12</sup> reported one-third to one-half of those patients who received head injury severe enough to warrant hospitalization developed chronic post-traumatic headache. Therefore the value of the electroencephalogram must be judged in the light of the cases of head injury both with and without symptoms. Greenblatt<sup>14</sup> found approximately seven percent of abnormal tracings in two hundred and thirty members of his symptom-free hospital associates. The value of this study merely points up the fact that the true post-traumatic group have abnormal electroencephalograms in approximately seven times as many cases as the expected abnormal ratio among normal individuals.

#### **Conclusions**

*What then does this survey reveal and what help can we expect from the EEG in non-structural headaches allowing for differences in standards of interpretation?*

- *In Hereditary Migraine: a) Sixty to sev-*

*enty-five percent of the patients had abnormal tracings. (Most of these patients could be treated with anticonvulsants—the remainder by conventional means.)*

- *In Non-Hereditary Migraine: a) Fifteen*

to twenty-six percent of the patients had abnormal tracings. (A small percentage of these could be treated with anticonvulsants — the remainder by conventional means.)

● In Psychogenic Headache: a) The EEG is useless for obtaining positive diagnostic findings. b) The EEG by being negative is helpful in ruling out organic structural causes for headache.

● Post-Traumatic Headache: a) With macroscopic organic damage associated with neurologic signs or convulsive phenomena or blood in the spinal fluid or all three, seventy-four percent had abnormal electroencephalograms. It must be recognized however that other

methods are probably of more diagnostic value such as spinal tap, x-ray etc. However in such conditions as subdural hematomas severely diminished activity over the area covered or infiltrated by the blood can be followed by progressive changes in the electroencephalogram giving information as to whether the condition is regressing or spreading.

b) Without macroscopic visible damage from forty to fifty percent of the cases with head injury with or without symptoms do show abnormal records. From this number one must deduct approximately seven percent for the group of normal patients with the so-called abnormal record.

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Rolling Hill Hospital



## WHAT'S YOUR VERDICT?

In this issue and every issue, *Medical Times* presents authentic medico-legal cases and their interesting court decisions. Test your medical magistracy.

SEE PAGE 59a

DIAGNOSIS AND  
SURGICAL TREATMENT OF

# HEAD and NECK CANCER

**T**herapeutic measures available to the patient suffering from head and neck cancer in many instances give favorable results. These results are enhanced by an early diagnosis which in certain locations represents no problem since a visible or palpable tumor on the tongue, the floor of the mouth, in the parotid or thyroid glands is quite obvious. However, there are many examples of tumors in the head and neck which have remained occult for so long a period of time that they produce as their first sign a metastasis rather than symptoms referable to the primary site.<sup>5</sup> The hidden nature of some head and neck tumors must be kept constantly in mind.

For example, cancer of the paranasal sinuses represents a particularly vexing problem in early diagnosis and the majority of patients are first seen in an advanced stage of disease.<sup>6</sup> Symptoms such as increased nasal discharge, paresthesias of the cheek and face, painful upper molars, unhealed, draining tooth sockets following extraction, trismus, and malar eminence tenderness warrant further study. Cancer of the nasopharynx tends to remain hidden and asymptomatic for many months and, in the majority of patients, will give as its first sign an enlarged metastatic lymph node in the neck before symptoms of the primary site become noticeable.<sup>4</sup> Or because of its proximity to the foramen lacerum, and extension through this foramen, the overlying abducens (sixth) nerve becomes involved and causes lateral rectus paralysis. The unwary diagnostician is thus lead away from the primary site of disease.

- ✓ *The diagnosis of head and neck tumors is discussed and a working classification presented.*
- ✓ *Anatomical considerations of head and neck tumors and their relationship to cervical lymph node metastases are described.*
- ✓ *Clinical considerations and the natural history of various types of head and neck tumors are reviewed.*
- ✓ *The indications for surgery are discussed and the results of a series of patients presented.*

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Small cancers in the vallecula may remain hidden for years in the numerous lymphoid folds of this area, and long before they become apparent give rise to early neck node metastasis. Cancers deep in the pyriform sinus act similarly and, again, give as their initial sign a metastatic lymph node in the neck. Thyroid cancers are notorious for the occult nature of the primary tumor and an easily palpable cervical node metastasis.<sup>7</sup>

The neck holds the key to diagnosis of tumors in this region. Cancers of the oral cavity, the paranasal sinuses and nasopharynx, and of structures in the neck itself, as a rule, metastasize to the cervical lymph nodes first. A more accurate diagnosis of head and neck cancer can be made if the neck tumors, which are the more apparent ones, are divided into primary and secondary groups. The primary

TABLE I

I. PRIMARY TUMORS:

- *Congenital:*
  1. Thyroglossal remnant
  2. Branchial cleft remnant
  3. Cystic hygroma
- *Salivary Glands:*
  1. Parotid
  2. Submaxillary
  3. Sublingual
- *Thyroid*
- *Parathyroid*
- *Vascular:*
  1. Carotid body
  2. Hemangioma
- *Lymphoid:*
  1. Lymphomas (benign and malignant)
- *Neurogenic:*
  1. Peripheral nerves
  2. Cranial nerves
  3. Sympathetic nerves and ganglia
- *Miscellaneous:*
  1. Lipomas
  2. Skin (melanoma, basal-cell carcinoma, squamous carcinoma)
  3. Paranasal Sinuses (mostly maxillary)
  4. Bone (Mandible)
  5. Cervical Esophagus and Hypopharynx
  6. Larynx
  7. Trachea

II. SECONDARY TUMORS

- i. e., metastases to lymph nodes from:
  - *Paranasal sinuses*
  - *Nasopharynx*
  - *Oral cavity:* lip, tongue, upper and lower gums, palates, tonsils, pharynx
  - *Larynx*
  - *Major salivary glands*
  - *Thyroid*
  - *Below Clavicle:* lungs, stomach, pancreas, colon, testicle

(Reprinted from Pollack, R. S., *Tumor Surgery of the Head and Neck*, Lea & Febiger, Publishers, Philadelphia, 1957, P. 10.)

group includes those tumors arising from neck structures independent of other organs. The secondary group of tumors are enlarged lymph nodes, related to disease in other parts of the body. A practical working classification appears in Table I.

### Anatomical Considerations

A very common sign of intraoral cancer is the discovery of a metastatic lymph node in the neck (Figure 1). For this reason the lymphatic pathways of the neck deserve special consideration.<sup>10</sup>

Situated over the carotid bulb and just beneath the tendon of the digastric muscle, is the lymph node most frequently involved by metastatic intraoral cancer. Primary tumors of the tongue, especially the middle and posterior thirds, of the lower alveolar ridge, of the lateral aspects of the floor of the mouth, of the tonsil and tonsillar pillars, and the buccal mucosa and extrinsic larynx frequently metastasize to this node first. Recognition of this fact should call immediate attention to one of these anatomical locations.

Lymph nodes which follow the internal jugular vein are also frequently involved with metastases. These are divided into three broad groups: superior, middle, and inferior, and denote the anatomical level of metastasis. A tongue cancer, for example, arising on the middle or posterior third may first metastasize to the superior group of nodes and then spread to the middle group as well. Involvement of two or more groups of nodes often denotes a tumor of long duration or one which is very aggressive.

Metastatic nodes along the spinal accessory nerve usually signify a tumor of the nasopharynx, maxillary or ethmoid sinuses. The alert physician may recognize the primary site on the basis of the location of these metastases. Tumors in these primary sites often give intraoral symptoms as well.

Enlarged lymph nodes in the submental and submaxillary triangles may be due to cancers of the lower lip, anterior third of the tongue, floor of the mouth and anterior lower gum.

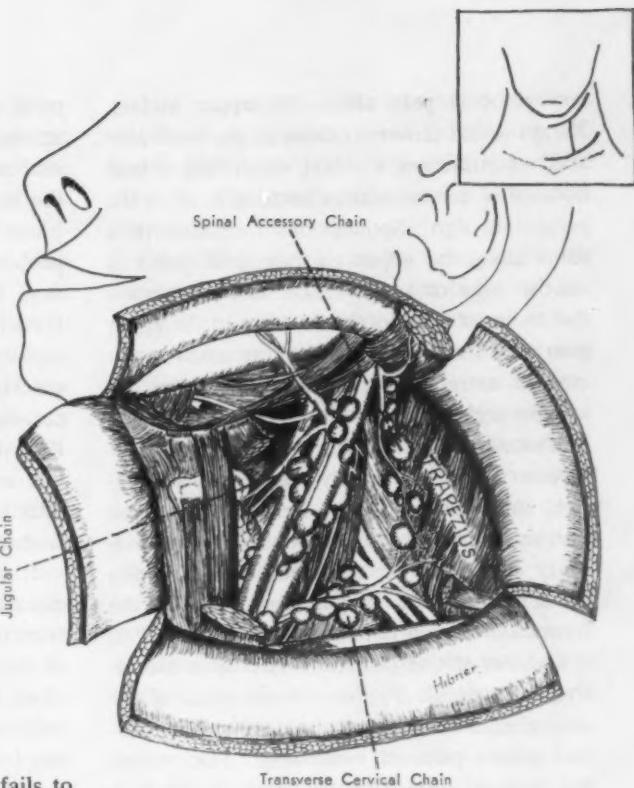
Metastases to nodes are almost invariably silent. Slowly growing, asymptomatic lymph nodes appearing in the neck of an adult should never be neglected and always warrants further clinical investigation.

### Clinical Considerations

- *Carcinoma of the lower gingiva:* Frequently, but not invariably occurring in edentulous people the first symptom may be an ill-fitting or "wobbly" denture. Its presence around jagged tooth edges, infected stumps, and in areas of irritation due to badly made prostheses is well known. Poor oral hygiene, alcoholism, and tobacco addiction are common accompanying features which may possibly play some part in the etiology of this disease. Patients with teeth often present a small ulcer along the gingival tooth margin which fails to heal despite oral hygiene which has been administered for several weeks. Not infrequently extractions are performed directly in the center of the ulcerated area under the mistaken impression of advanced inflammatory disease. Pain is a late symptom and usually indicates superimposed infection, by anaerobic streptococci so prevalent in the mouth, or bone invasion.

Other cancers may start as small warty or papillary tumors. Gradual enlargement may produce ulceration or a hard firm tumor extending along the gingival surface. Increased growth causes invasion of the underlying mandible and in a short time the problem becomes one not only of soft tissue, but also of diseased bone. Extension to the gingivobuccal gutter or floor of the mouth and undersurface of the tongue adds to the complexities of therapy and increases the tendency toward cervical lymph node metastases.

In rapid succession an easily cured, small tumor is changed to a ravaging menace requiring heroic measures of therapy for a cure which at times is impossible.



**FIGURE 1** Diagram illustrating lymph node pathways which follow the internal jugular vein, the spinal accessory nerve and those nodes lying transversely across the lower neck.

Early diagnosis which can only be proven by biopsy is mandatory for the successful treatment of all intraoral cancers. Although methods and techniques for the treatment of the advanced cancer patient do exist, the prognosis is altered markedly when the primary tumor is larger than two centimeters and when metastatic lymph nodes appear in the neck.

- *Carcinoma of the upper alveolar ridge and maxillary sinus:* Tumors of the upper gums and palates are less frequent than those arising on the lower gum. The same factors predisposing toward the formation of any intraoral cancer are present here, but in addition, the close proximity of the overlying maxillary sinus not infrequently causes involvement of an upper alveolus in cases of antral carcinoma. A common symptom of cancer of the maxil-

lary sinus is pain about the upper molars. X-rays reveal erosion of bone at the tooth root and, on extraction, a socket which fails to heal because of carcinomatous invasion is often the presenting sign. Spontaneous formation of a sinus along the upper gingivobuccal gutter is another sign of antral cancer and not always due to an infected tooth. Swelling of the upper gum and cheek should arouse as much suspicion of antral cancer as it would of an abscessed socket or root.

Cancers on the anterior portion of the upper alveolar ridge are usually warty, flat, plaque-like, and painless. They often occur in areas previously involved by leukoplakia. The majority of patients are edentulous and irritation by dentures seems to play some part in the formation of such tumors.

Cancers arising posteriorly are often ulcerative and painful. Frequent involvement of the musculature of the soft palate and tonsillar pillars causes pain on swallowing. Pain makes the patient seek medical advice early and, therefore, these tumors are often small when first seen as contrasted with the more anterior tumors. The tenet that the farther posterior an oral tumor the more malignant is well brought out by this group. A posteriorly situated tumor involves the lymphatics more rapidly and when the primary tumor is near the midline, metastases to cervical lymph nodes are often bilateral. Invasion of the underlying bone occurs early and has a direct bearing on methods of treatment and prognosis. Large tumors involving the posterior portion of the upper gum are among the most difficult to treat successfully.

Tumors of the *hard and soft palate* are directly related to alveolar ridge lesions and present the same problems. With the larger tumors it is often impossible to tell whether they arose on the ridge or on palatal tissue. Extension of either tumor involves both regions.

• *Carcinoma of the floor of the mouth:* Anatomically the floor of the mouth extends from the lower gum to the undersurface of the tongue. Tumors in this region are among the

most malignant in the mouth. Early, well restricted tumors, as in all other forms of intra-oral cancer, can be satisfactorily managed, but the larger tumor involves both the tongue and lower gum by direct extension and creates problems common to all three organs. In addition, invasion of the mandible is common. Usually starting as a small ulcer, it spreads rapidly and metastasizes to cervical nodes quickly. When present anteriorly, bilateral cervical node metastases are not infrequent. Pain does not occur until invasion of the mobile undersurface of the tongue or secondary infection takes place. Mandibular involvement is always painful, but this is a later occurrence.

It is distressing to see patients with this disease who have been on veritable odysseys from doctor to doctor with mistaken diagnoses of fungi, tuberculosis, syphilis, or "indolent ulcer, floor of the mouth" for which gallons of antibiotics and arsenicals have been given without benefit, but loss of valuable time before definitive diagnosis is made.

• *Carcinoma of the tongue:* The tongue is a remarkable organ and is the most complex within the oral cavity. Composed largely of muscle fibers it seldom rests, but constantly propels saliva and food into the esophagus. The exquisite sensation of taste is almost wholly dependent on its normal function. Its broad sweeping movements spread salivary secretions to all parts of the oral cavity, keeping them moistened and protected. Its functions are so vital that one is continually amazed at how long patients may neglect tumors which cripple its action.

Tumors involving the tongue are the most common oral neoplasm. The difference between an anterior and a posterior oral tumor is vividly illustrated with tongue cancers and because of this difference, tongue tumors are referred to as anterior, middle, or posterior third lesions. Cancers arising in each third act as tumors of entirely unrelated organs. The poor prognosis of cancer of the base of the tongue contrasts sharply with the good results of cancers arising on the anterior third.

Cancer of the tongue arises almost always

on the lateral borders and may begin on leukoplakic patches or as small warty excrescences; as soft, friable, papillary growths; or as innocent-looking ulcers. Occasionally they are submucosal and present as firm nodules. Increase in size is progressive and symptoms, such as pain, are relatively late. Cervical node metastases, at times bilateral, occur early with tumors on the posterior third. Rich lymphatic pathways, the occult nature of tumors in this location, and the technical problems of therapy combine to dampen the ardor of the most enthusiastic.

Fortunately, cancers of the posterior third represent only one-third of all tongue tumors. The remainder, arising on the anterior and middle thirds, grow less rapidly and metastasize less widely. They are noticed more readily by the patient, dentist, and physician, and treatment is begun earlier in their course. In no other site within the oral cavity does early diagnosis pay such large dividends in terms of longer survival.

● *Carcinoma of the buccal mucosa:* This is an easily accessible and readily visualized anatomic location, but despite even early diagnosis, one is always guarded as to the chances of permanent cure. Such tumors are invasive and infiltrative. They metastasize early, and when large may involve the mandible or maxilla by direct extension. Small, leukoplakic, plaque-like elevations usually serve as the starting point of these cancers. Ulceration and invasion occur next and, as in any form of cancer, increased size magnifies the difficulties of therapy. This is especially true with tumors of the oral cavity, where one works in a limited and anatomically restricted field.

#### Methods of Treatment

There has been active discussion over the merits of surgery or irradiation as to the best method of treatment for this group of tumors. However, many issues between roentgenologist and surgeon have been clarified during the past decade. The limitations of radiation, and its latent effects,<sup>12, 13</sup> plus a lowered mortality following many operations has given the sur-

geon great impetus. The advent of improved anesthesia, antibiotics, blood transfusions and better techniques have spurred the rise of surgery in the treatment of head and neck tumors.<sup>1</sup>

Operability, that is can the tumor be cleanly excised without unnecessary morbidity or mortality, is the keynote for the surgeon. Common sense frequently dictates this. The patient who presents a large, fixed neck mass precludes successful surgery, as does one whose intraoral cancer is so large its margins cannot be defined. This does not mean, however, that the surgeon should choose the easy cases and let his x-ray colleague treat the bad ones, but it does suggest a practical limit to resection.

There are times when surgery is the undisputed choice of therapy. These would be, for example, situations where radioresistant tumors are present. Thyroid cancers, for the most part, are not radio-sensitive and cure of a patient with this disease is through surgery.<sup>11, 14</sup> Tumors of the major salivary glands are of similar nature, and tumors of neurogenic and vascular origin are also resistant to the effects of radiation. There is no disagreement over the patient who has a recurrence. That is, one who has had radiation first but now shows a recurrent tumor. Surgery for them represents the only other chance for cure.

The treatment of metastatic cervical lymph nodes is also a primary surgical problem. Only in the clearly inoperable or palliative instances would one recommend irradiation here. True, occasionally a small, solitary node in the neck may be heavily irradiated with good results, but to cover the entire neck field in one x-ray port for the treatment of cervical node metastases, is a completely useless gesture, as far as curing the cancer is concerned.

Less certainty exists with other tumors. In general, however, irradiation is not recommended where tumors overlie cartilage or bone, such as on the nose, ear or gums. This applies as well to cancers which invade the maxilla. Eradication of cancer in bone with radiation is not only very difficult, but usually causes extreme morbidity from osteomyelitis and

osteonecrosis. In many cases secondary bone resection is necessary.

Patients who require immediate therapy also are better candidates for surgery. Where there is respiratory obstruction, difficulty in swallowing, imminent hemorrhage, or intractable pain the quickest method which will obtain relief should be used. This, understandably, falls into the surgeon's domain.

### The Combined Operation

There has been varied enthusiasm for the combined procedure of neck dissection with continuity removal of the hemimandible and an intraoral cancer. Nevertheless, it would appear from other publications,<sup>3, 8, 13, 15</sup> and from an analysis of results reported on page 161 that the operation has an important place in the treatment of certain head and neck cancers. Aside from the fact that the logical method of treating these cancers is by an en bloc approach, many of these patients have no alternative therapy available.

The decision to perform the combined operation depends on many factors: the size and location of the tumor, the presence and nature of lymph node metastasis, the accessibility of the tumor to adequate radiation therapy, or whether it is a radiation recurrence, the problem of mandibular involvement, and general physical and mental qualities of the patient himself. Certainly all oral cancers do not have to be treated by the combined operation. Local excisions, limited resections, suprathyroid dissections and use of the electrocautery all have their place.

The indications for the combined operation have been discussed in other papers,<sup>3, 8, 9, 13</sup> as has the importance of removing with the primary oral tumor and lymph nodes of the neck the intralymphatic pathways between the primary cancer and neck nodes (Figure 2). Such pathways traverse the periosteum of the mandible. In addition, bone invasion by contiguity is an early occurrence. Only by resecting a portion of the mandible, or at least, the overlying periosteum, can a true en bloc resection of primary cancer, lymphatic pathways and

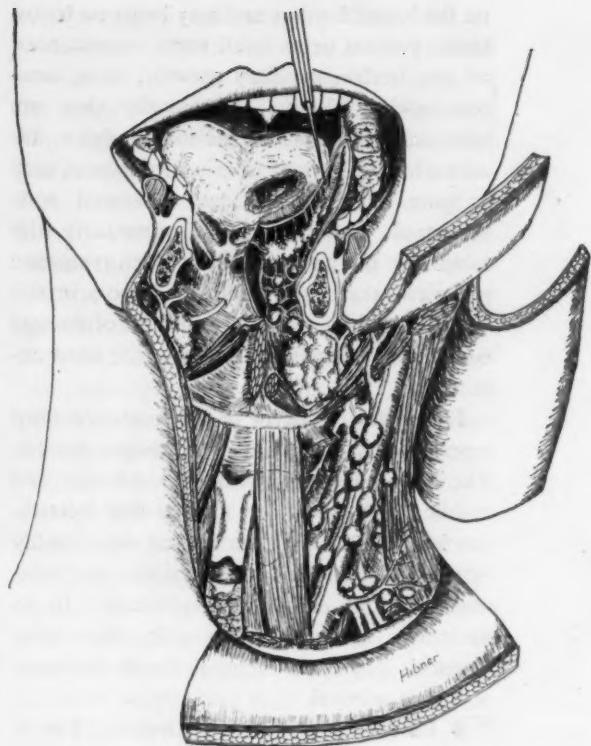


FIGURE 2 Diagram illustrating the lymphatic pathways and lymph nodes in one continuous chain from an oral cancer to the cervical nodes below. Note the importance of the periosteum.

nodes be accomplished. In actual practice the majority of patients seen with oral cancer do require the combined operation for treatment.

With certain cancers, namely smaller lesions along the lateral margin of the tongue or on the floor of the mouth, the combined operation may be performed and the mandible preserved by stripping the periosteum off the mandible and dissecting around the oral tumor. The freed tissue is then pulled through beneath the mandible onto the neck, thus keeping the continuity of the procedure intact but avoiding a bone resection. This is the so-called "pull through" operation.<sup>3, 8, 13</sup> If added exposure of the oral cavity is needed the mandible may be divided at or near the symphysis, the ends spread apart, the periosteum stripped and intra-oral surgery performed in continuity with the

neck dissection.<sup>5</sup> The specimen is removed, the bone ends wired together, and the oral mucosa is sutured over the exposed bone. Such procedures leave little if any facial disfigurement, although there is an intraoral deformity (Figure 3).

In general, these latter procedures should not be performed when the cancer is less than 1 cm. from the mandible, or for cancers which arise on the anterior tonsillar pillar, the tonsil or lower alveolar ridge. From the results obtained it would appear that in selected cases these procedures are useful, permitting en bloc resection, yet maintaining normal facial contour. They have the disadvantage that one can easily underestimate the size and extent of such oral cancers which, as a rule, require wide resection of soft parts and bone to prevent early recurrence and failure.

### Results

Therapeutic procedures for cancer must be evaluated in terms of survival and morbidity. Survival alone is not enough, for unless a patient returns to useful, comfortable and near normal levels the therapy may be open to question. It is obvious that following many major surgical procedures for cancer the patient will have to adjust and accommodate to some deformity. Thus the colostomy patient learns to irrigate; the totally gastrectomized patient learns to diet; the mastectomy patient learns to conceal; the pneumonectomy patient learns to relax; and the amputee learns to reorient. When considered in this light the deformities following extensive head and neck surgery create no greater problems in adjustment than those required following the more common operations. Add to this a satisfactory survival rate one may fairly conclude that the operation is not without merit.

Forty-seven patients who had the combined operation for intraoral cancer were recently reviewed and are available for follow-up studies of two or more years. Of these patients over half had previous therapy when first seen (eighteen roentgen ray, five surgery, four x-ray and surgery). Despite this only fifteen pa-



FIGURE 3 Postoperative view of patient following combined operation in which the mandible was divided at the symphysis and reapproximated. The deep supraclavicular hollow is due to a thoracoplasty performed ten years previously for tuberculosis.

tients, including two postoperative deaths, have thus far died of cancer. One postoperative death occurred in an elderly, poor-risk patient, and the other from massive hemorrhage following wound disruption in a previously irradiated field.

These results seem even more convincing when one considers that over half the group represent a therapeutic failure from some previous form of treatment. In addition, thirty-three (70 percent) of the forty-seven patients had cervical lymph node metastasis as well as uncontrolled primary cancers at the time the combined operation was performed. These patients had problems not of the mouth alone, but of neck node metastasis as well. By per-

forming anything less than the combined procedure one would stand little chance of eradicating the cancer.

The resulting loss of some portion of the oral cavity with or without a part of the mandible did not prevent any of these patients from resuming their previous occupation. In this group are a doctor, dentist, engineer, forester, clerk, beauty parlor operator, housewife, waiter, mechanic, carpenter, dog catcher, and those in various other working capacities. All overcame their deformity and resumed useful employment. It must, therefore, be justly concluded that when a wise decision for surgery of this type is made the survival rate and lack of morbidity make it wholly worthwhile.

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450 Sutter Street



An In Vitro Diagnostic Thyroid Test

# Erythrocyte "Uptake" of 1-Triiodothyronine

*The rationale, method, and results of an in vitro test of thyroid function employing radioactive 1-triiodothyronine are described. Many laboratories are equipped to perform this procedure as a routine test. Difficulties likely to be encountered and their management are also described.*

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**A**s an outgrowth of basic research in the thyroid hormone plasma-protein complex, Hamolsky in 1957<sup>9</sup> described a simple *in vitro* method of measuring thyroid function. The test involves measuring the amount of tagged thyroid hormone incorporated by erythrocytes during incubation. His preliminary data has been supported by additional reports from his laboratory<sup>8</sup> and others.

To visualize the mechanism of action, it is probably worthwhile first to consider the function of the thyroid gland, and then to make assumptions concerning circulating thyroid hormone-plasma binding relationships.

After iodine enters the thyroid gland, it combines with tyrosine to form mono- and

diiodotyrosine. Following oxidation and coupling, two diiodotyrosines form tetraiodothyronine (thyroxine). It is stored as thyroglobulin (colloid) and released as tetraiodothyronine or triiodothyronine, following the removal of one iodine atom. These two thyronines are the physiologically active hormones.

Plasma transport of these hormones to the cell or tissue is a subject of considerable investigation. It was once thought that they were linked to some specific globulin fraction. Recent electrophoretic studies<sup>6</sup> have identified three separate plasma binding sites: (a) a pre-albumin, (b) an albumin, and (c) an inter-alpha globulin. Refinements in technique may indicate even more sites.

The "working" assumption is that plasma binding sites are normally partially occupied by thyronines. When there are more circulating thyronines as in hyperthyroidism, more of the added 1-triiodothyronine  $I^{131}$  is available for red cell "uptake" since available binding sites are occupied by the excess thyroxine and 1-triiodothyronine.<sup>2, 4, 8, 11</sup> A summary of established factors is shown in Figure 1.

## Method

Duplicate determinations are performed on heparinized whole blood. Hematocrits are determined on thoroughly mixed blood in Wintrobe hematocrit tubes, 3,000 rpm for one hour. The hematocrit is recorded. An addi-

tional ten minutes of spinning is done; and if there is no change, the first reading is assumed to be the hematocrit. 1-triiodothyronine  $I^{131}$  diluted with 50% propylene glycol such that small volumes, 0.1 to 0.3 cc's has sufficient activity to yield approximately 70,000 counts per minute is counted. To this is added 3 cc's of whole blood; the test tube is stoppered, and incubated for two hours at 37 degrees centigrade. (Hamolsky uses a 10 cc. stoppered Erlenmeyer flask and a Dubinoff "incubaker."<sup>10</sup>) Upon completion of the incubation, the test tube is centrifuged and the plasma carefully removed. Aliquots of plasma are counted. The red cells are washed five times with five fold volume of isotonic saline, carefully resuspending the cells each time. After the final wash and removal of saline, the activity associated with the erythrocytes is recorded. This is then calculated for a 100% hematocrit to correct for natural variation by final count divided by initial count times hematocrit times 100.

$$\frac{\text{Final Count}}{\text{Initial Count} \times \text{Hematocrit}} \times 100$$

These steps are diagrammatically outlined in Figure 2.

### Results

Factors which adversely affect the red cell "uptake" of 1-triiodothyronine  $I^{131}$  include the excess anticoagulant,<sup>7</sup> severe anemia,<sup>2</sup> inadequate mixing before determining the hematocrit,<sup>10</sup> failure to stopper the test tube or flask,<sup>9</sup> dissociation of 1-triiodothyronine  $I^{131}$ ,<sup>1</sup> volume of solution of 1-triiodothyronine  $I^{131}$ ,<sup>10</sup> and the light sensitive nature of thyronines. By attention to detail, the influence of these factors may be minimized. It is important not to use excess anticoagulant, and it appears that one may just as well either use oxalate, citrate, or heparin. The anemia may be corrected to a "normal" range by adding or removing plasma. Failure to stopper the container may reduce the "uptake" as much as 50%. Dissociation of 1-triiodothyronine  $I^{131}$  is the major problem facing the supplier with

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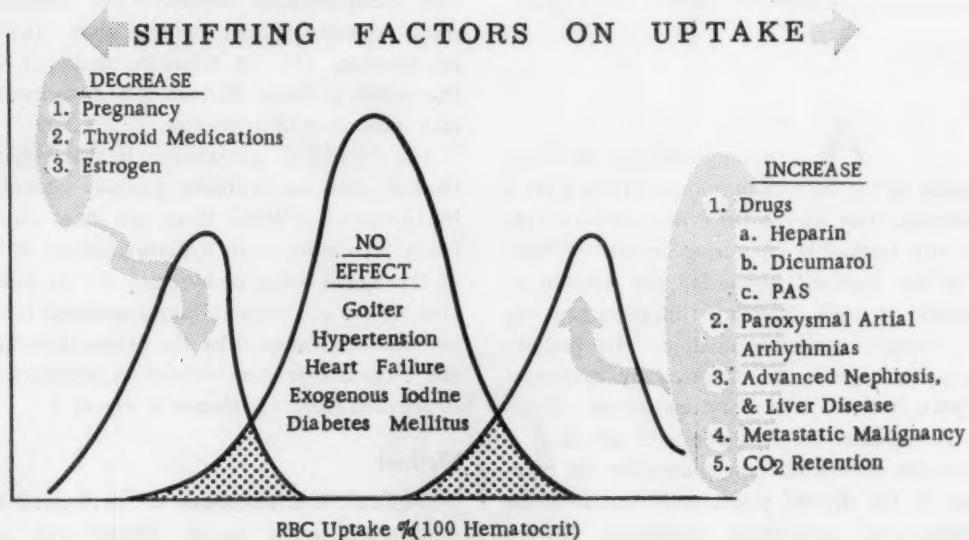


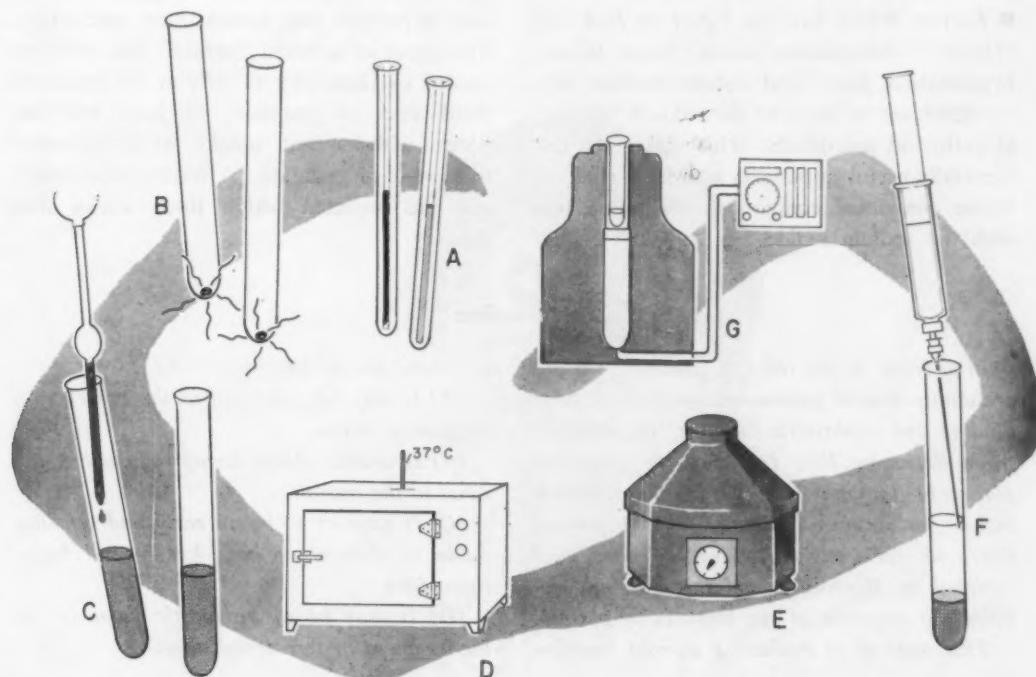
FIGURE 1 Diagrammatically shows the effect of known factors on the "uptake" as well as the overlap of various clinical states. The dotted areas represent the overlap and show that most patients' "uptakes" are discriminatory.

a shelf-life of two weeks. It is presently available on a biweekly basis. The diluent should be 50% propylene glycol. A convenient place to store the material is in a refrigerator. Refrigeration apparently has no effect toward reducing the dissociation rate, but does provide a good dark box.

Factors under investigation which may affect the red cell "uptake" include medications, immunizations, the menstrual cycle, and agitation of the cells during incubation. Some medications may produce unexpected alterations of the red cell "uptake." Our preliminary data suggests one of the antituberculous drugs, probably PAS, increases the red cell "uptake." Factors influencing the globulins may alter the mechanism of binding. We attribute one of our elevated red cell "uptakes" in a euthyroid patient to a series of gamma globulin injections. It is quite clear that pregnancy

lowers the red cell "uptake"; it has been suggested that the menstrual cycle may alter the "uptake" significantly. A program has been inaugurated to assay this influence. The problem of agitation during incubation has not been settled. Hamolsky has a very reproducible technique. It would be prudent to employ his method of slow agitation during incubation. Employing rapid agitation produces hemolysis.

- **Effect of Thyroid Status:** As might be expected, there is an overlap between thyroid states in the "uptake" (Figure 1). However, the majority of the hyperthyroid group have higher "uptakes" than the highest normal values. Also a very few euthyroid patients have "uptakes" in the range of most of the hypothyroid patients. Each laboratory may have to establish its own range of normal values.<sup>1</sup> The range of duplicate determinations



**FIGURE 2** Steps taken to incorporate I-triiodothyronine  $I^{131}$  into red cells. A. Duplicate hematocrits are prepared; B. I-triiodothyronine  $I^{131}$  is counted and C. measured volume of blood is transferred to each tube. D. After two hours incubation; and E. centrifuging; F. the excess plasma is removed by 5 washings with normal saline. G. The activity remaining with the red cells is counted.

should not exceed 1.5%. It has been suggested that males may have a slightly higher "uptake" than females.<sup>9</sup>

● *Effect of Treatment of Thyrotoxicosis:* The demonstration of favorable influence of therapy generally precedes clinical improvement. As early as two days and certainly by seven days, there should be a decrease of red cell "uptake" when propylthiouracil is given in adequate doses. Overdosage with propylthiouracil will lower the red cell "uptake" into the hypothyroid range. The red cell uptake response is not so dramatic following surgery and I<sup>131</sup> therapy; however, the "uptake" should be normal within three months after treatment. Our experience is quite limited in the follow-up observations, but agrees with others.

● *The Effect of Treatment of Hypothyroidism:* Our experience is even more limited, but the red cell "uptake" appears to be a valuable guide to therapy especially when 1-triiodothyronine (Cytomel®) is used.

● *Factors Which have no Effect on Red Cell "Uptake":* Exogenous iodine, heart failure, hypertension, goiter, and diabetes mellitus have no significant influence on the red cell "uptake" in euthyroid individuals. This makes the test especially useful in patients who have received iodine containing compounds which interfere with the sodium iodide I<sup>131</sup> "uptake" studies

and which elevate PBI levels.

● *Factors Which Increase the Red Cell "Uptake":* Heparin, Dicumarol, and probably PAS elevate the "uptake" into the distinctly hyperthyroid range in over eighty percent of the patients. Hamolsky found in fifteen patients out of thirty-nine with paroxysmal atrial tachycardia a distinctly elevated "uptake." We have had one patient in three examined who exhibited this phenomena. Advanced nephrosis and liver disease, advanced metastatic malignancy, and CO<sub>2</sub> retention have been found to elevate the "uptake." Our experience has been limited to patients with multiple myeloma in whom it has been elevated.

● *Factors Which Decrease the Red Cell "Uptake":* Thyroid medications (propylthiouracil and iodides) in thyrotoxicosis lower the red cell "uptake." Hamolsky reported a lowered uptake in both male and female patients receiving estrogen therapy. The red cell uptake is consistently lowered during pregnancy except in patients who terminate by miscarriage. The onset of lowered "uptake" has been recorded by Hamolsky as early as the estimated third week of gestation; we have had one patient with lowered "uptake" at the estimated fifth week of gestation. A return to normalcy may be expected within three weeks after delivery.

## Discussion

In addition to the red cell "uptake," we are evaluating several parameters involving plasma binding and erythrocyte "uptake" of added 1-triiodothyronine I<sup>131</sup>. Our data suggests that plasma binding may be a more direct approach and its performance is simpler. At this present time, we recommend following the method outlined by Hamolsky, and this does not require the counting of the aliquots of plasma. This method of evaluating thyroid function

has these advantages:

- (A) It may be employed in the presence of exogenous iodine.
- (B) It avoids administering radioactive material to the patient.
- (C) It appears to be an early and sensitive guide to therapy of both hyper- and hypothyroidism.
- (D) It may be of prognostic value in the management of threatened abortions.

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**CLINI-CLIPPING**  
Angioneurotic Edema



# Hemorrhagic Syndromes and

The study of the abnormal proteins (the dysproteinemias) is indeed fascinating, even though little is known about them. There may be a hemorrhagic tendency in patients who have abnormal blood protein. Blood vessel walls may be damaged by the abnormal protein, and actual defects in the sequence of clotting may occur. In some instances, there may be an associated thrombocytopenia.

The development of the filter paper method of electrophoresis has been of help in the recognition of some abnormal proteins. It is not at all unusual to find the necessary equipment for protein electrophoresis in even small community hospitals. Therefore, all of us should be familiar with the method. The tracings will be more easily understood if one keeps in mind the fact that electrophoresis of blood serum is just another laboratory method for the separation of proteins. One then must learn to think in terms other than albumin and globulin; the globulin now being separated into at least alpha<sub>1</sub>, alpha<sub>2</sub>, beta and gamma fractions. Not all the dysproteinemias have abnormal patterns. Figure 1 illustrates a normal electrophoretic pattern.

The most common abnormal proteins (the "dysproteinemias") in which hemorrhage is associated are cryoglobulins, macroglobulins, the "m" protein of multiple myeloma, and the increased globulins in Waldenström's purpura. These unusual proteins may be found in a variety of diseases.

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## Cryoglobulinemia

The name is descriptive; the protein is acted upon by cold and precipitates or becomes gelled. This may be observed at room temperature—a precipitate forming, either solid or gel. The cryoglobulin rapidly dissolves at 37° C., or by merely holding the test tube in one's hand. Cooling at 4° C. may be necessary to precipitate the cryoglobulin. The cryoglobulins are gamma globulins related to the macroglobulins.

We have observed cryoglobulin in rheumatoid arthritis, leukemia, lymphoma, multiple myeloma and cirrhosis of the liver. Recently, we observed the phenomenon in an adult female patient with idiopathic thrombocytopenic purpura, with mild rheumatoid arthritis, a normal electrophoretic pattern and an absence of lupus cells. Occasionally, the plasma of the patients with lupus erythematosus and other collagen disorders may contain a protein that precipitates in the cold but will not redissolve.

Purpura may occur with cryoglobulinemia and may be mild or severe. One of our patients, after exposure to the cold, had necrotic purpuric lesions of the ears, nose and exposed areas of the body. The ulcers were most difficult to treat (healing being negligible) and the patient expired. Chronic purpura may produce pigmentation due to iron deposition in the skin. Epistaxis, gingival bleeding and extensive retinal hemorrhage have been reported.

## Macroglobulinemia

A purpuric state associated with a large abnormal protein was described in 1944 by

# Abnormal Proteins

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Waldenström.<sup>1</sup> He called it "macroglobulinemia." Hanlon and Bayrd<sup>2</sup> reported four cases. The plasma contains an abnormal protein which, when ultracentrifugated, reveals a "heavy" protein—the "S-20" component. The principal signs are a marked increase in the sedimentation rate, a chronic, slowly progressive anemia and, in some cases, a high percentage of lymphocytes in the differential count, but no evidence of leukemia.

The chief complaints are lassitude, dyspnea and the occurrence of hemorrhage in the nose and mouth. Some enlarged lymph glands are observed and, in many instances, there is moderate hepatosplenomegaly. Changes in the

fundi are considered to be so characteristic as to be almost pathognomonic. There is retinal hemorrhage and venous engorgement. The bone marrow may contain an increased number of cells resembling lymphocytes. The clinical course is slow in most cases but may, on occasion, be rapid.

A simple screening test can be used, and is discussed by Waldenström<sup>3</sup> and Stefanini and Dameshek.<sup>4</sup> If a small amount of plasma (0.2 ml.) is allowed to drop into distilled water (5.0 ml.), a heavy white precipitate forms (Sia water-dilution test). Figure 2 illustrates this phenomenon. The protein fraction on electrophoresis has a narrow band of abnormal

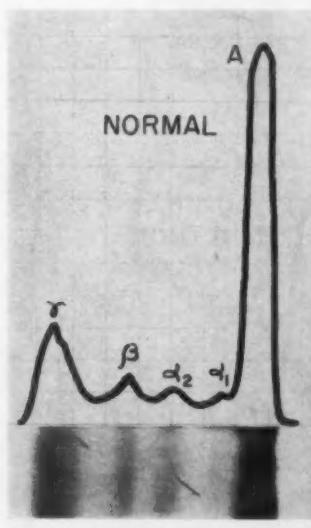
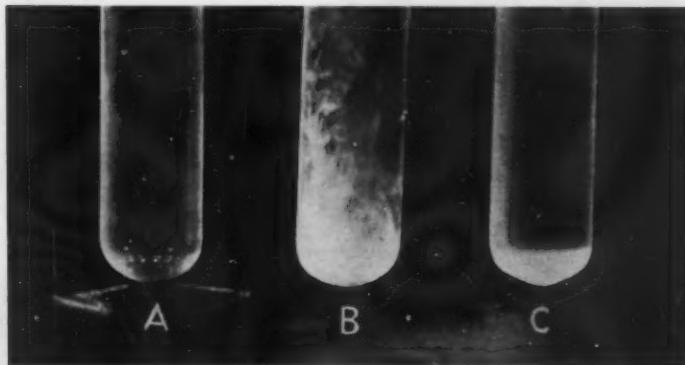


FIGURE 1 Normal electrophoretic pattern of blood serum protein. Both the tracing and the stained filter paper strip are shown. Bands of protein correspond to the "protein peaks" of the graph. A is albumin;  $\alpha_1$ ,  $\alpha_2$ ,  $\beta$  and  $\gamma$  are the globulin fractions.

FIGURE 2 The "Euglobulin Test" or Sia water-dilution test. 0.2 ml. of plasma is dropped in 5.0 ml. of distilled water. Normal plasma is in tube A. Tube B is shortly after adding the abnormal plasma. Tube C shows the precipitate of macroglobulins after standing. This is a screening test for macroglobulins.



WALDENSTROM'S PURPURA

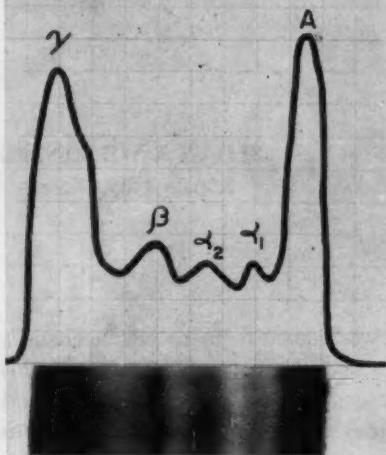


FIGURE 3 Electrophoretic pattern of blood serum in purpura of idiopathic hyperglobulinemia (Waldenström's purpura hyperglobulinemica). The gamma globulin peak is high and broad.

FIGURE 4 Typical electrophoretic pattern of blood serum in multiple myeloma. The gamma globulin is tremendously elevated. This peak is a combination of normal gamma globulin and the abnormal "m" protein of multiple myeloma.

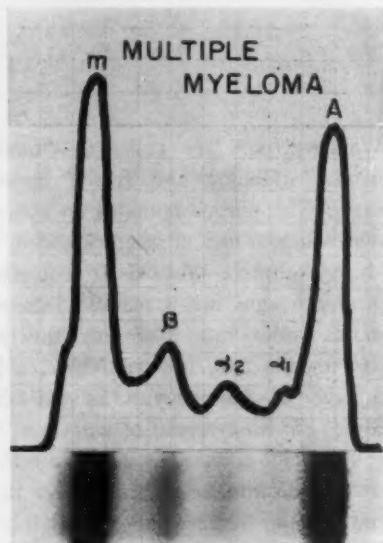


FIGURE 5 Electrophoretic pattern of blood serum in multiple myeloma. In this patient, the abnormal "m" protein lies between the gamma and beta-globulin peak.

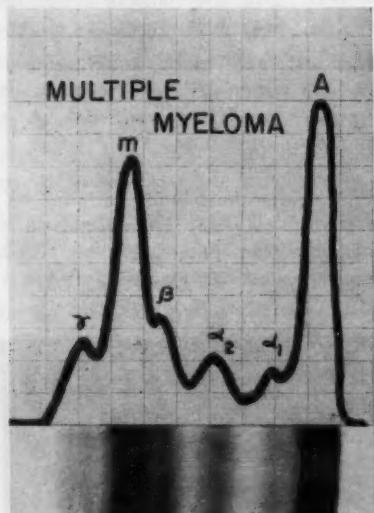
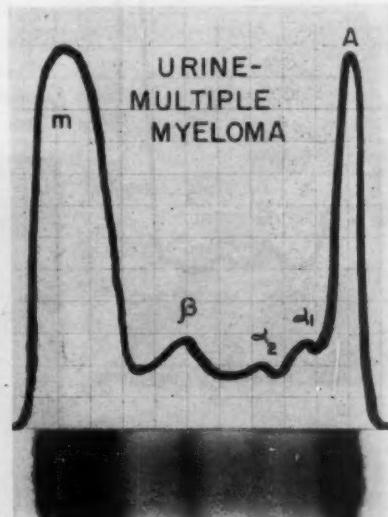
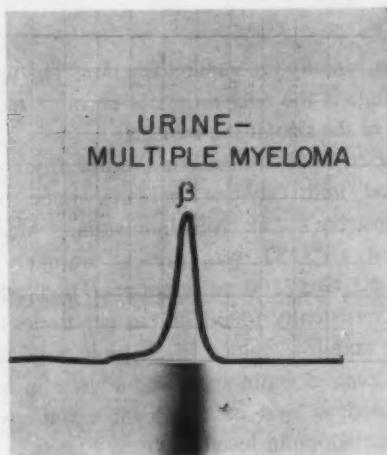
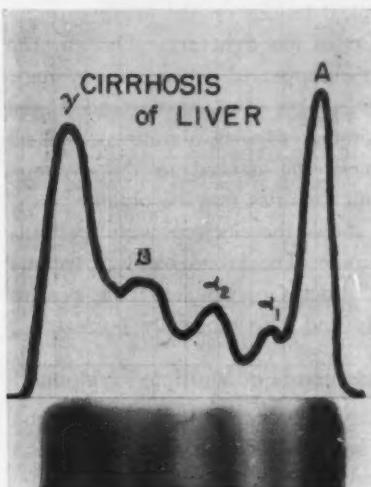


FIGURE 6 Electrophoretic pattern of a concentrated urine of multiple myeloma. All protein fractions are being excreted and the pattern is almost the same as the blood serum.

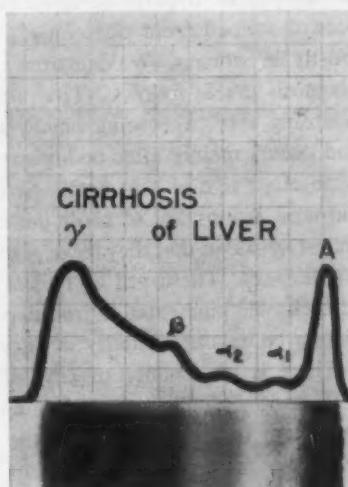
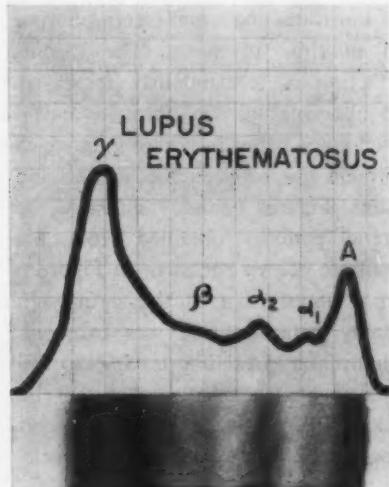


**FIGURE 7** Electrophoretic pattern of concentrated urine of multiple myeloma. Only beta-globulin is being excreted. The blood serum electrophoretic pattern was essentially normal.



**FIGURE 8** Electrophoretic pattern of blood serum of hepatic cirrhosis. The albumin is excellent although the gamma-globulin is increased and tends to slope or "fall off" into the beta-globulin.

**FIGURE 9** Electrophoretic pattern of blood serum in far-advanced hepatic cirrhosis. The albumin fraction is decreased. The gamma-globulin is increased and the band is broad and slopes or "falls off" conspicuously into the beta-globulin.



**FIGURE 10** Electrophoretic pattern of blood serum in disseminated lupus erythematosus. The pattern is similar to that in Figure 8 (in a patient with hepatic cirrhosis).

protein, usually the gamma fraction. The ultracentrifuge is the only means of absolute recognition of the size of the molecule.

Eriksen<sup>5</sup> has studied the serum from one hundred and fifty-one patients, none with Waldenström's macroglobulinemia. Macroglobulin ( $S > 15$ ) was present normally in about 0.3 Gm./100 ml. amounts. High values were consistently found in the nephrotic syndrome and low values in multiple myeloma. Both alpha<sub>2</sub>-globulin and gamma globulin were implicated as sites of significant variations in the macroglobulin level of cases studied.

#### Purpura with Hypergammaglobulinemia

This disease was previously known as orthostatic or anaphylactoid purpura before the description and recognition of the hemorrhagic syndrome by Waldenström<sup>6, 7, 8</sup> in 1943. He stated that he believed the disease syndrome was not uncommon, of a benign nature, and of long duration. Fourteen patients with purpura of idiopathic hypergammaglobulinemia have been described from our clinic.<sup>9, 10</sup> It occurs mostly in women. Waldenström's criteria for diagnosis are as follows: The purpura is of a relapsing type, appearing chiefly on the legs, and occurs mainly after bodily exercise. There is no other sign of a hemorrhagic disease. The purpuric lesions are of short duration but are characteristic in that they leave pigmented spots on the legs. These are of typical appearance with chronic pigmentation iron deposition. One patient complained bitterly of "dry eyes."

There is an absence of any other "acceptable diagnosis." The serum globulin is increased, and there is no tendency for the protein increase to return to normal. The increase in protein is in the gamma globulin fraction. The erythrocyte sedimentation rate is rapid. The usual coagulation studies are normal. The course of the disease is benign and the outcome has never been fatal.

Major surgical procedures were indicated in two of our patients. No cases previously reported had undergone such procedures. A transurethral prostatic resection was done in one patient and a mitral valve commissurotomy

in the other, with no hemorrhagic tendency whatsoever. Blood loss was minimal. Recovery was uneventful.

One patient, a nurse, was of exceptional interest. She was employed by the Student Health Out-Patient Clinic. She had typical purpura of idiopathic hypergammaglobulinemia with the typical lesions on the lower extremities, but also in the right arm. The purpura on the arm disappeared when an automatic thermometer shaker was recommended and obtained. Another woman, a waitress, had no purpura unless she danced in the evening! Unusual clinical stories may be obtained.

Figure 3 shows the electrophoretic patterns in the syndrome. The broad band of gamma globulin is distinct. One wonders if the protein is chemically and physiologically normal.

#### The Dysproteinemia of Multiple Myeloma

The bleeding tendency in multiple myeloma is usually a late complication. The explanation of its etiology is complicated because of the presence of abnormal globulin fractions, thrombocytopenia and the possibility of amyloid infiltration of vessels and tissues. The diagnosis of the disease is made by the demonstration of the abnormal plasma cells infiltrating and replacing the usual marrow elements. Roentgenograms are usually of help. Remarks will be limited to the unusual serum and urine protein electrophoretic patterns.

Figure 4 illustrates the usual electrophoretic pattern in multiple myeloma. The gamma globulin fraction is tremendously increased. This is an abnormal or "m" protein and is demonstrated much better in Figure 5, in which the "m" protein lies between the gamma and beta globulins. Figures 6 and 7 illustrate the electrophoretic patterns obtained from the urine concentrate of two patients. In Figure 6 the pattern is almost that of the serum. In Figure 7 only beta globulin was excreted. These are unusual and exciting tracings to obtain; one never knows exactly what will be found. Incidentally, the peripheral blood and bone marrow slides have a dark staining background due to the high protein content.

Perhaps the difficulty in explaining the hemorrhagic tendency may be illustrated by recent observations on our clinical service. Two patients were admitted with multiple myeloma, with essentially the same hematologic and protein changes. One required nasal packs to control epistaxis; the other was given anticoagulant therapy for a migratory thrombophlebitis.

### The Dysproteinemia of Hepatic Cirrhosis

The exact mechanism of hemorrhage in patients with cirrhoses is unknown. The article by Finkbinder, McGovern, Goldstein and Bunker<sup>11</sup> is revealing, in that the cause was not found—all elements being somewhat depressed but no single element depleted to hemorrhagic levels. Definite purpura was present in one of our patients with cirrhosis. The euglobulin or Sia water-dilution test for macroglobulins was positive. Cryoglobulins were present. Ultra-

centrifugation revealed a moderate increase in globulin above S-15.

Figures 8 and 9 illustrate the electrophoretic patterns of two cases with cirrhosis. Notice the extremely broad slope of the curve extending into the beta-globulin complex.

### Collagen Disorders and Related Diseases

Figure 10 illustrates the serum protein electrophoretic pattern in a patient with disseminated lupus erythematosus. The gamma globulin is quite similar to that obtained in cirrhosis. This patient and another with rheumatoid arthritis had a circulating anticoagulant that was an antithromboplastin. This phenomenon is not completely understood. An occasional patient with disseminated lupus may have a tremendous increase in plasma cells in the bone marrow—a difficult diagnosis if only the bone marrow and blood proteins are studied.

### Discussion

*The excellent presentation of the dysproteinemias by Stefanini and Dameshek<sup>3</sup> should be mentioned. Very little is known about the formation of these abnormal proteins. They probably are formed by either malignant or diseased cells. In some diseases, there is an explanation, but it may not be correct. Thus, in multiple myeloma, the abnormal protein is probably a product of the plasma cells. In Waldenström's macroglobulinemia, the lymphocytes or lymphocytoid cells may be the site of origin.*

*The origin of cryoglobulin is entirely unknown, to the extent that there isn't even an*

*acceptable theory as to its formation.*

*Certainly, many of the dysproteinemias have an elevated gamma globulin. One wonders if, in Waldenström's purpura with tremendous amounts of gamma globulin, this is truly a normal protein. The same question could be raised about the proteins in hepatic cirrhosis and lupus erythematosus. Are these proteins the product of an abnormal disturbed reticuloendothelial system?*

*Treatment is certainly of little value at present.*

*Much remains to be learned about these unusual and fascinating abnormal proteins.*

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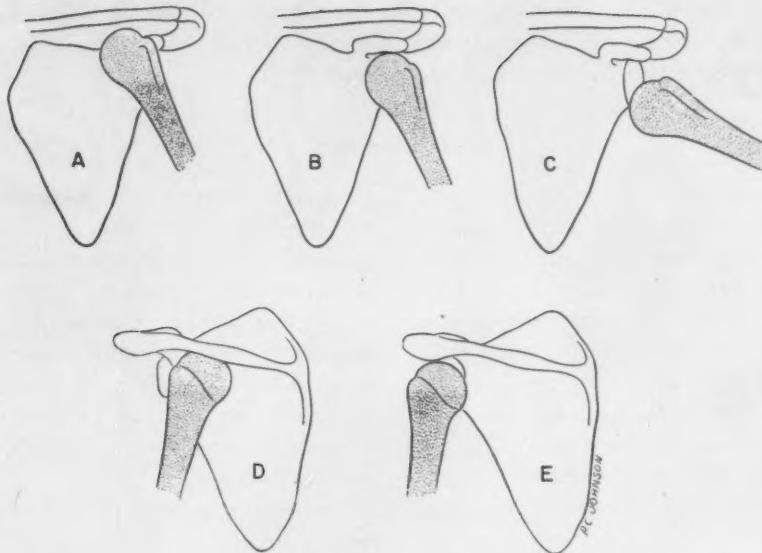
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#### CLINI-CLIPPING



#### SHOULDER DISLOCATIONS

- A. Subclavicular
- B. Subcoracoid
- C. Primary Subglenoid
- D. Subspinous
- E. Subacromial

**I**t is often the lot of busy clinicians that they begin to accept without question of etiology that which the pathologist describes. In this instance reference is made to such acute diseases as cholecystitis, appendicitis, hemorrhagic pancreatitis, and non-specific ulcerative colitis. Our intention is to arouse interest in the Sanarelli-Shwartzman phenomenon *as a clinical entity*. Numerous times since Sanarelli's (1924) and Shwartzman's (1928) description of the phenomenon bearing their names, laboratory studies have pointed dubiously to possible clinical counterparts. Whether this reaction is allergic or not is unsettled, but the majority opinion is that it is a non-specific altered tissue reaction influenced by the activity of the reticuloendothelial system. Experimental lesions which are found in many organs, in particular kidney, lung, liver, heart and spleen, are produced by the intravenous injection of bacterial endotoxins twenty-four hours apart. The reacting or second injection may be a different endotoxin from the preparatory or first injection or such substance as Liquoid (sodium polyanethosulfonate).

The microscopic findings include focal necrosis and venous thrombi which are amorphous eosinophilic masses often with enmeshed blood cells. However, the cardinal change is renal cortical necrosis and hemorrhage which can be produced by two intravenous injections of endotoxin or by a reacting injection following the "priming" of pregnancy or cortisone therapy. Koplik<sup>1</sup> also noted that renal cortical necrosis occurred in animals prepared with a virus injection followed by bacterial endotoxin.

There has been a difference of opinion concerning the significance of venous thrombi. Thomas and Stetson<sup>2, 3, 4</sup> wrote that in the local Shwartzman reaction, which is closely related to the general phenomenon, leukocyte-platelet thrombi are formed in capillaries and veins prior to the onset of hemorrhage. Gerber<sup>5</sup>

## Sanarelli-Shwartzman Phenomenon

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stated that hemorrhage preceded thrombosis. Certainly diffuse vascular lesions of a hyaline fibrinoid nature are commonly seen. It is most likely that the fibrinoid masses arise from extravasated plasma, and evidence has accumulated to show that the participation of the clotting mechanism is necessary for the completion of the reactions composing the generalized Sanarelli-Shwartzman phenomenon.<sup>6</sup> Ravin<sup>7</sup> induced the reaction in endotoxin prepared animals by the injection of whole plasma extracts of animals in shock. The chilled heparinized plasma of rabbits which were given intravenous endotoxin and of humans with rheumatic disease yields a gelatinous protein precipitate.<sup>8</sup> The electrophoretic migration of the precipitate is similar to fibrinogen, a probable precursor of the fibrinoid material (thrombi) which occurs in the Sanarelli-Shwartzman phenomenon.

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Attention has been drawn to the similarity between the fibrinoid lesions of systemic collagen diseases and the generalized Sanarelli-Shwartzman reaction.<sup>9</sup> The morphologic and staining properties of fibrinoid in both types of disease are much alike. Although the arguments are strong in favor of fibrinoid being derived from fibrinogen or fibrin, this bridge in concept may be misleading. Because both types of disease have fibrinoid changes we cannot then say that they have the same etiology. Yet a clearer picture is developing. Movat<sup>10</sup> states that "fibrinoid is derived from the conglomeration and homogenization of a fibrinous exudate." Further support for this comes from the work of Gitlin<sup>11</sup> who used fluorescein-labelled rabbit antisera against human fibrin.

The reticuloendothelial system plays a significant role in the Sanarelli-Shwartzman reaction. A small dose of endotoxin apparently modifies the activity of the system so that a larger dose of endotoxin injected soon after heightens phagocytosis instead of damaging the cells. This enhanced protective action of the reticuloendothelial system may be an effective factor in prohibiting the development of the Sanarelli-Shwartzman phenomenon clinically,

unless the system can be blocked. An expected follow-up experiment was the production of the reaction with one dose of endotoxin after blocking the reticuloendothelial system with colloidal suspensions.<sup>12</sup>

How often does the Sanarelli-Schwartzman phenomenon occur in clinical practice? In a large series of patients given intravenous typhoid vaccine Hench<sup>13</sup> observed cases of appendicitis, cholecystitis, pleuritis, adenitis, and iritis which he considered to be reactions related to protein therapy in the presence of latent foci of infection. Margareten and McAdams<sup>14</sup> noted instances of renal cortical necrosis in fulminant meningococcemia as manifestations of the generalized reaction. Sanarelli<sup>15</sup> suggested that acute appendicitis is similar to this "experimental hemorrhagic allergy." He theorized that the appendix becomes sensitized following a chronic inflammation (preparatory) and that a bacteremia originating from some other site leads to the acute stage of appendicitis (reacting). Possibly in this manner foci of infection activate distant lesions. One might find in this concept a more reasonable rationale for removing foci of infection, but care must be exercised in not condoning the haphazard and useless procedure.

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# Staphylococcal Disease in Infancy

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Staphylococcal infections have become of increasing concern to all physicians, primarily because of the problems of cross infections in hospitals. Some of the most impressive evidences of staphylococcal diseases have been observed among young infants and postpartum women. Impetigo neonatorum, mastitis and other commonplace and seemingly insignificant infections have been in recent years the forerunner of a number of disastrous epidemics of staphylococcal infection in newborn services. Demonstrations in recent years have proved that the hospital is a repository of drug-resistant staphylococci and the increasing development of resistance of staphylococci has enhanced the importance of these infections. This organism has been slowly but surely acquiring "special biologic characteristics" making it an important factor to be dealt with in hospital patients.<sup>1</sup>

The scope of this paper will be limited to a discussion of *staphylococcal disease in the newborn and very young infant*.

## Microbiological Aspects

Staphylococci are relatively easy to cultivate in the laboratory, an abundant growth occurring within twenty-four hours after inoculation of usual media. Several commercially prepared media containing high salt concentration for selective isolation are readily available.

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Whereas the *Staphylococcus albus* may be pathogenic, the *Staphylococcus aureus* much more commonly acts as a pathogen.

The exact manner in which *Staphylococcus aureus*, a normal inhabitant of the skin and upper respiratory tract, initiates infection is unknown. It has long been recognized that pathogenic staphylococci possess certain virulence factors (toxins). Some of these are hemolysin, lethal toxin, dermonecrotoxin, leukocidin, enterotoxin, staphylokinase and others. While activity of certain of these factors *in vitro* has been adequately demonstrated, evidence is lacking that they act similarly *in vivo*. At the present time, coagulase is the virulence factor of greatest practical importance. It is generally agreed that the capacity to produce coagulase is the simplest and most practical index of the pathogenic potential of strains of staphylococci isolated from infections. It can be detected by (1) the rapid slide test of Cadness-Graves, (2) the tube method, and (3) the plasma agar method.

The isolation in recent years of staphylococcal bacteriophages and the development of a practical method of phage typing has provided an invaluable epidemiologic tool for the precise differentiation of strains of staphylococci especially in outbreaks. The details of technique and application have been given by Blair and Carr<sup>2</sup> and Anderson and Williams.<sup>3</sup> For routine typing, nineteen basic bacteriophages have been recommended by the Subcommittee of Bacteriophage Typing of Staphylococci of the International Committee on

Bacteriological Nomenclature, London (Table 1 below).

Shaffer et al<sup>7</sup> studied nineteen epidemics of staphylococcal disease in newborn nurseries in widely separated locales and found all were due to phage type 42B/47C/44A/52/80/81. Usually referred to as 80/81 strain, this strain has been responsible for most outbreaks among newborn infants. Other strains which may be responsible for nursery outbreaks are phage types 52 and 52A. We have studied a recent outbreak among newborn infants due to 70/44A.<sup>8</sup>

### Epidemiology

The vast majority of individuals carry coagulase-negative or coagulase positive staphylococci in their upper respiratory passages. At any one time a great preponderance of staphylococci in an individual's nasopharynx will consist of a single phage type but will produce no illness or immunological host response. The number may fluctuate markedly over a period of many months. In all probability, even the highly pathogenic strains themselves do not cause significant primary pharyngitis or other respiratory tract disease, although they sometimes invade tissues already damaged by other infectious agents. It is surprising, however, how readily staphylococcal flora is transmitted from person to person. The likelihood of colonization by new strains of staphylococci and the person's persistence as a carrier depend largely on the extent of his contact with disseminators

of staphylococci. These may be other healthy carriers, or they may be individuals with clinical staphylococcal disease, who usually also carry the same strain in the nasopharynx. For this reason a much higher percentage of hospital personnel are carriers of *Staphylococcus aureus* than of people in other occupations. Wise, Cranny and Spink<sup>4</sup> found coagulase-positive *Staphylococcus aureus* in the nasopharynx in thirty-two percent of the personnel on a surgical staff. Shaffer, Baldwin and Wheeler<sup>5</sup> found this organism present in nasal cultures of thirty-eight percent of healthy hospital personnel. The carrier rate of coagulase-positive staphylococci is definitely higher in hospital personnel than in the community at large. Typical findings are those of Nelson<sup>6</sup> who found a carrier rate of sixty percent among hospital personnel and of thirty percent in outpatients.

### Nature of Spread of Staphylococci in Newborn Nurseries

At birth the newborn infant has virtually no bacteria on the skin and mucous membranes. However, as early as twenty-four hours after birth a certain percentage of infants have been colonized by *Staphylococcus aureus* and the strain is one which is almost always present among nursery or delivery room personnel, rather than one carried by the mother. The rate of colonization increases daily to reach an average of thirty percent of the infants by the sixth day.<sup>5</sup> Other workers have reported higher rates. In most cases a relatively few strains account for a major percent of the colonization, with a single strain predominating at any one time. In addition to the presence or absence of carriers among hospital personnel, other factors including the type of skin care used for the infants, characteristics of the strain of staphylococci and length of nursery stay influence the rate of colonization. The potentiality of an individual for transferring staphylococci to a new host also varies from person to person. By means of epidemiologic and air sampling techniques, Eichenwald and co-workers<sup>11</sup> have shown that a newborn infant

TABLE 1 CLASSIFICATION OF STAPHYLOCOCCAL BACTERIOPHAGE\*

GROUP	BACTERIOPHAGE*
I	29, 52, 52A, 79 (29A)
II	3A, 3B, 3C, 55 (51, 523)
III	6, 7, 42E, 47, 53, 54, 70, 73, 75, 77 (42B, 47B, 47C, 76, Va4)
IV	42D
Miscellaneous	(31, 42C, 44, 44A, 47A, 57, 80, 81, 142)

\* Figures in parentheses are phage designations not included in the basic typing series but which have been used by many investigators.

infected with staphylococci may fall into one of two distinct groups. The majority of babies possess a low index of infectivity or contagiousness, while a small minority is highly infectious to others. Because infants of the latter group are literally surrounded by clouds of bacteria, they have been referred to as "cloud babies." Present evidence suggests that these "cloud babies," even though they may present no overt signs of disease, play an important etiologic factor in explosive outbreaks of staphylococcal disease.

### Clinical Features of Staphylococcal Infections in Infancy

The most common manifestations of staphylococcal infections in the neonatal period are conjunctivitis, skin rashes, and paronychia and may be overlooked because of their initially benign behavior. The conjunctivitis and the rashes may be mistaken for "heat rash," erythema toxicum neonatorum, or diaper irritation. Paronychia is often regarded as secondary to mechanical irritation. The most common site of staphylococcal infection is the skin and the usual manifestation is a vesicle, partly filled with cloudy fluid (pyoderma). In contrast to the more common form of erythema toxicum neonatorum in which pinhead-sized vesicles and pustules occur over the entire body within the first three days after birth, the lesions of pyoderma are larger, occur later in the first week of life, and usually are first noted in the skin folds (neck, axilla, groin, and perineum). Cultures of these lesions should be obtained promptly to determine if they are staphylococcal in origin.

Because of the ubiquity of *Staphylococcus aureus* in the environment and in healthy carriers, it is impossible to prevent transfer and colonization of the mucous membranes and the skin of infants. Even the most rigid techniques will only minimize this process and an unavoidable minimum of staphylococcal infections may therefore be expected to occur in any nursery. Some infants may harbor strains of high virulence for weeks and even months before developing severe infections with their resident

strain. In some cases the development of another local or systemic condition of benign nature such as miliaria may trigger the appearance of severe superimposed pyoderma.

Pyoderma may progress to extensive cellulitis or occasionally abscess formation usually without accompanying lymphadenitis. Lymphadenitis is rarely encountered. Surgical wounds in infants with pyoderma are so prone to become secondarily infected that elective operations such as circumcision should be postponed when an infant has an obvious infection or is located in a nursery when staphylococcal infection is present. Paronychia is usually due to the staphylococcus. While pyoderma around the umbilicus is common, frank omphalitis of staphylococcal origin is unusual. Staphylococcal conjunctivitis is extremely common and may be quite mild. However, conjunctivitis during the neonatal period should be studied for evidence of staphylococcal etiology as diligently as such lesions were examined not so many years ago for the present of gonococci.<sup>5</sup>

Purulent mastitis which is a frequent manifestation of staphylococcal disease should not be confused with simple engorgement of the breasts due to the effect of transplacentally passed hormones from the mother. Typically both breasts are involved and signs of inflammation are absent in contrast to staphylococcal mastitis which is unilateral and characterized by frank inflammation and abscess formation.

Pneumonia is a common and serious manifestation of staphylococcal disease in the newborn. It may be preceded by other pyoderma or other forms of staphylococcal infection. In other cases the pneumonia may be the first manifestation of infection. As with other serious infections in the very young infant there may be no fever or other traditional signs of infection but only lethargy or feeding disturbances. Respiratory symptoms and signs may appear only late in the course.

Further, the clinical picture may be masked by previously administered antibacterial drugs. Staphylococcal pneumonia is commonly accompanied by pneumatocele formation, empyema

and various forms of pneumothorax.<sup>9</sup> Surgical drainage of the pleural space, often as an emergency procedure, may be necessary. Septicemia often precedes or is associated with staphylococcal pneumonia. Any infant, especially in the neonatal period, with any suspicions of infection without obvious cause should have blood cultures and chest roentgenograms as part of the evaluation.

Septicemia may be associated with any of the lesions previously described. However, it is rarely associated with mastitis. As with pneumonia, infants with staphylococcal septicemia may show few if any manifestations of infection until the last few hours before death.

Other clinical expressions of staphylococcal disease include purulent arthritis and osteomyelitis, hepatic and intra-abdominal abscesses, and meningitis.

Breast abscess in nursing mothers is a com-

mon sequel to epidemics of staphylococcal disease in newborn infants.<sup>5</sup>

While the clinical manifestations of the various lesions described above usually occur during the first few days of life, much longer incubation periods have been observed.

The morbidity is also not limited to newly born infants. Wentworth et al<sup>10</sup> have found that a significant percentage of family contacts of infants overtly involved in newborn nursery outbreaks or of those asymptotically colonized developed clinical staphylococcal lesions following discharge of the infant from the hospital to the home. The risk of infection among family contacts lasted for five or more months in many instances.

The prevention, control and management of staphylococcal infection in infants are of the greatest importance. However, detailed discussion of them is beyond the scope of this article.

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## HYPERPIESIA

*Hyperpiesia is a serious disorder affecting some millions of Americans. Careful examination, a few tests, and intelligent therapy can mitigate the distress of most, prolong the life of many, and even cure a few of these unfortunate individuals.*

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San Diego, California

Elevation of the blood pressure is one of the oldest diseases in the world. One of the early Pharaohs, probably Minephthah, was said to have had "a large heart." The seventh chapter of *Exodus*, in the third verse, relates the "hardened" heart of another Pharaoh.

Mild elevation of the systolic blood pressure is found frequently in a large number of patients, but elevation of systolic readings beyond 160-180 mms. Hg. systolic and 100 mms. Hg. diastolic calls for repeated pressure readings. An intelligent member of the household, even the patient, and especially an interested and sympathetic nurse, can greatly help establish reasonably accurate levels by repeated examination. Hyperpiesia over 180-200 mms. Hg. systolic and 100-120 mms. Hg. diastolic poses a diagnostic problem and an obligation. There is a problem to establish the etiology and

there is an obligation to prescribe intelligent long-term therapy.

The problem is a broad one, but one plan of diagnostic approach which could be carried out in almost any physician's office is outlined in Table I.

A previous history of blood pressure elevating disease, such as childhood nephritis, a toxemia of pregnancy, recurrent urinary tract disease, or the ingestion of nephrotoxic substances, may help establish the etiology, the gravity of the hyperpiesia, and in some cases, the probable future course. Clues to a latent or impending azotemia may come from a history by the patient of malaise, headaches, visual deficiencies, or anorexia. Sudden weight change may be significant.

The family history may yield fruitful evidence of arterial problems, cerebral accidents and metabolic defects in relatives—provided simple descriptive or common terms are employed in the questioning, and technical, medical terminology is avoided.

Racial ancestry may be pertinent because hyperpiesia in Orientals is rare, fairly frequent in Latin groups, and is said to occur in thirty-five percent of the adult Africans in the Congo.

The physical examination must be especially thorough, carefully evaluating the ocular fundi, the heart, and the great vessels. Urinary tract disease should be looked for patiently. Metabolic abnormalities usually can be established or excluded by physical examination alone.

Normal routine laboratory reports in the patient with hyperpiesia should not forbid or

TABLE 1

- A complete past medical and surgical history.
- A detailed family history.
- A complete physical examination.
- Laboratory tests:
  1. Complete blood count.
  2. Urinalysis.
  3. E.K.G.
  4. I.V.P.
  5. Teleroentgenogram for cardiac outline.
  6. N.P.N., B.U.N., P.S.P., B.M.R., Cholesterol, P.B.I.,  $I^{131}$  uptake, if facilities permit.
- Special tests:
  1. Cold pressor test.
  2. Histamine test.
  3. Sodium thiopental or amobarbital tests.
  4. Phentolamine, piperoxan hydrochloride, and dibenamine tests for pheochromocytomas.

delay further special examinations because fruitful therapy can only follow reasonably exact determination of etiology. A cold pressor test done by placing the patient's hands in cold or ice water for five minutes will elevate the blood pressure—in the nervous, emotionally labile patient—about 30 mms. above previous levels and should help plans for treatment. Injection beneath the skin of 1 cubic centimeter of histamine solution containing 0.1 mgm. of histamine base (omitting this procedure in the known peptic ulcer patient) will often raise the reserved, reticent patient's pressure to surprisingly high levels. This should suggest mild psychotherapy with ventilation of hostilities. Blood pressure determinations at about ten-minute intervals after the intravenous administration of five or ten cubic centimeters of one percent solution of thiopental sodium or after exhibiting two hundred milligrams (200 mgms.) sodium amobarbital capsules every hour until the patient is sleeping soundly will usually establish the true basal blood pressure levels. Recovery from the thiopental sodium will be much more rapid—freeing the recovery room—than the amobarbital test.

Few average physicians will see very many pheochromocytomas, but surgical removal can usually be lifesaving. Phentolamine, piperoxan,

or dibenamine tests should be done when suspicion of an epinephrine-producing tumor arises.

Phentolamine (Fig. 1) can be injected intravenously with the patient supine. Sedation should be omitted twenty-four hours previously. The blood pressure should be determined every thirty to sixty seconds for ten minutes. An immediate, marked drop (50-60 mms. Hg. systolic, 20-25 mms. diastolic) makes the diagnosis of pheochromocytoma highly probable.

Piperoxan hydrochloride (Fig. 2) can be added to an intravenous infusion of normal saline—using 0.25 mgm. per kilogram of body weight. The calculated dose should be injected over a two-minute period. The blood pressure should be measured every minute for fifteen minutes. A significant fall in four minutes, returning to pre-injection levels in fifteen minutes, is diagnostic.

Dibenamine (Fig. 3) can be used in about the same manner as piperoxan, but 100 mgms. of the drug should be used. No weight calculation is necessary. Extensive, complicated, or even hazardous procedures, such as renal biopsy, arteriography, and large parenteral doses of quaternary ammonium compounds are scarcely recommended office procedures.

After the history (past, present, and family) is digested, the laboratory results analyzed critically, and the physical examination reviewed, an attempt to classify the type of hyperpiesia present should be done.

Patients with diastolic levels below 100 mms. Hg. and systolic swings of 170-180 mms. Hg.—if their laboratory and other tests are normal—can usually be labeled benign neurogenic hyperpiesia. The obvious or reasonably suspected renal lesions accompanying hyperpiesia submit to nephrogenic labeling, especially if azotemia is present. Arteriosclerotic hypertension should present no great problem. Any patient regularly having blood pressure elevations beyond 120 mms. Hg. diastolic and 200 mms. Hg. systolic, grossly abnormal blood chemistry, an enlarged heart, definite eye grounds changes, and a pale skin reeking of uremia merits the malignant definition.

Essential hypertension can best be reserved for the progressively deteriorating individual, usually relatively young, with climbing blood pressures, rising azotemia, and death usually a few short years away, but without obvious cause for hyperpiesia. If there is such a clinical entity as benign hypertension, let us reserve the term for persons with elevated systolic but normal diastolic pressure.

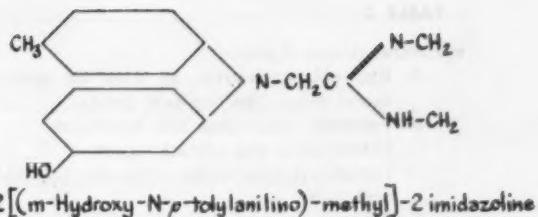
#### Treatment

After the true blood pressure levels have been established, a type classification attempted, and some of the more esoteric causes of hyperpiesia excluded, the problem of therapy may be approached. Most patients with hyperpiesia can be treated successfully with a few simple medications, plus a few rules of good hygiene. A young woman clerk with only moderate elevations of blood pressure (160/92) was recently seen. She was saved almost all of the \$60 previously spent on medication each month by reducing medication to phenobarbital, good hygiene, and a low sodium diet. Good general medical care and hygiene with weight control where indicated, plus correction of metabolic abnormalities where possible, are assumed to be standard operating procedure with all types of medical diseases, and will apply equally to hyperpiesia.

The greatest difference in opinion in treatment seems to arise between combinations of various antihypertensive agents, surgery, and diet.

G/P in 1950<sup>1</sup> extolled the merits and benefits of a sodium free diet—what patient will really follow it for the ten to fifteen years necessary! Surgical ablation of the sympathetic pathways was offered in G/P in 1951,<sup>2</sup> but a few patients have exchanged chronic hives and an expensive surgical scar for a temporary reduction in blood pressure and relief of headaches.

In 1954, Veratrum Viride derivatives were combined with hexamethonium<sup>3, 4</sup> for the encephalopathy. Accurate titration of dosages is not easy and vomiting can occur. A graduated regimen in April 1956, G/P,<sup>5</sup> combined mer-



2[[(m-Hydroxy-N-p-tolylanilino)-methyl]-2 imidazoline

FIGURE 1 PHENTOLAMINE

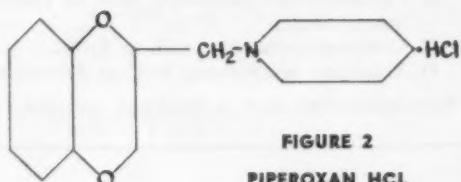


FIGURE 2  
PIPEROXAN HCL

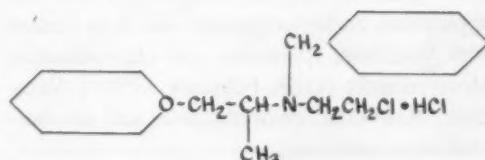


FIGURE 3 DIBENAMINE

curials, snakeroot, Veratrum, and ganglionic blocking compounds.

A scholarly text on hypertension<sup>6</sup> concluded extensive discourse on mechanics, diagnosis, and pathological end results of hyperpiesia by boosting a combination of hydrazinophthalazine hydrochloride and hexamethonium—laxatives were recommended to forestall stockpiling of the latter in the digestive tract. The lupus erythematosus-like complications of the former were not mentioned. The February 1957 issue of G/P,<sup>7</sup> recorded survival of only two years when hyperpiesia was complicated by uremia. Rauwolfia alkaloids, pentolinium tartrate, and mecamylamine hydrochloride appeared to postpone the fatal outcome.

Emergencies due to hyperpiesia (G/P, 1957<sup>8</sup>) were treated with centrally acting Rauwolfia, Veratrum, and hydrazinophthalazine plus ganglion blocking agents such as hexamethonium, pentolinium, chlorisondamine, or

TABLE 2

- Central Action Agents:
  - A. Rauwolfia derivatives, all from the apocynaceæ order, "the dog-bane family."
  - B. Veratrum compounds and derivatives.
  - C. Phenotrophic and ataroxic agents.
  - D. Dimallonyl urea compounds—the barbituric acid salts.
  - E. Thiocyanate compounds?
- Ganglion Blockade Agents:
  - A. Quaternary ammonium compounds, such as hexamethonium chloride.
  - B. Pentamethylene compounds, such as pentolinium tartrate.
  - C. Chlorisondamine salts, such as Ecolid.
  - D. Tolazoline preparations, such as Priscoline.
- Splanchnicectomy, such as Smithwick operation.

dibenzylidine. In G/P for December 1957,<sup>9</sup> the hyperpiesia during pregnancy was to be treated with Veratrum, Rauwolfia, and chlorothiazide. More recently (G/P, February 1958<sup>10</sup>) Veratrum, Rauwolfia, chlorothiazide, and amobarbital were combined.

The usually accepted potentiation of anti-hypertensive agents by chlorothiazide was analyzed in G/P for December 1958.<sup>11</sup> It was concluded that fair results could be expected by chlorothiazide alone, but a combination was definitely better. Arthur Fishberg<sup>12</sup> did not find the sodium free diet feasible, and he used no Veratrum or hydrazinophthalazine. Rauwolfia had merit, he said. Excessive mental depression from Rauwolfia and nausea from Veratrum narrowed medication advocated by Battley, et al<sup>13</sup> to hydrazinophthalazine for eclampsia, parenteral Rauwolfia (2.5-10 mg.) for real emergencies, and blocking agents if carefully titrated. Brief drug evaluation by Pullman<sup>14</sup> was predicated on diagnosis much as has been outlined in Table 1. Hollander<sup>15</sup> emphasized this same program. In addition to the five major groups of drugs (1. ganglion blocking agents, 2. hydrazinophthalazine, 3. Rauwolfia, 4. Veratrum, and 5. chlorothiazide), Estes<sup>16</sup> added potassium thiocyanate. Hyperpiesia—treated with chlorothiazide by Freis<sup>17</sup> is reduced by loss of sodium. Toxicity, when it

occurs, is apparently due to hypokalemia. Hydrochlorothiazide is said to cause less gastric irritation.

Treatment can be divided into centrally acting agents, ganglion blocking agents, and surgical splanchnicectomy for the unusual or rare case (Table 2).

Current popularity of reserpine, alseroxylon, and other alkaloids from Rauwolfia roots is partially deserved. Certainly the mildly tense, anxious executive with moderate hyperpiesia and no peptic ulcer will be benefited by reasonable doses of reserpine—0.1 mgm. after meals. The occasional hypertensive encephalopathy will be definitely helped by reserpine parenterally — 2.5-10.0 mgms. — intravenously or intramuscularly.

Vomiting prohibits promiscuous use of Veratrum compounds, but titration of dosage and patience will reduce hyperpiesia in some cases.

The phenotrophic agents, all basically derived from methylene blue, and the ataroxic agents such as hydroxazine, will buffer the emotional etiology in the nervous, tense, individual.

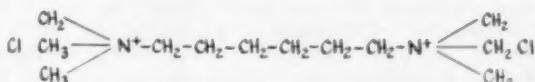
Barbituric acid salts in all forms, colors, and tastes can be added to any hyperpiesia armamentarium with benefit.

Phenobarbital is a common ingredient in most hypertensive mixtures. Certainly its low cost has merit.

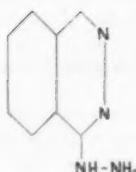
Potassium thiocyanate will control the headache in most of the cases of hyperpiesia and normotensive levels may be expected in about thirty-five percent of cases, provided blood level determinations are done regularly to maintain values of 8-10 mgms. percent. The patient with impaired renal function should probably be treated by other means. Simple kits are available for office tests of thiocyanate blood levels.

Medication directly affecting blood vessels should (Table 3) include all the quaternary ammonium salts—especially the hexamethonium salts. The hexamethonium compounds cause moderate changes in bowel habits and after a few weeks, sudden release into the

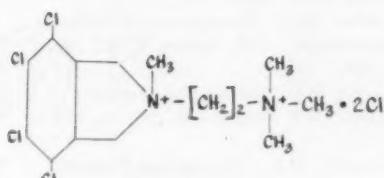
TABLE 3



(A) QUARTERNARY AMMONIUM COMPOUNDS

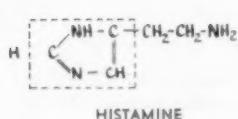


(B) PENTAMETHYLENE COMPOUNDS SUCH AS: HYDRAZINOPHTHALAZINE, OR PENTOLINIUM TARTRATE

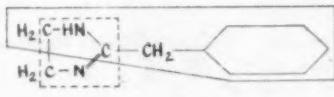


(C) CHLORISONDAMINE SALTS SUCH AS ECOLID

(D) TOLAZOLINE COMPOUNDS SUCH AS PRISCOLINE — NOTE SIMILARITY TO EPINEPHRINE AND HISTAMINE



HISTAMINE



PRISCOLINE



EPINEPHRINE

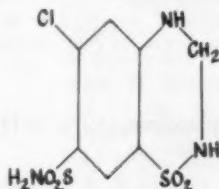
blood stream may cause severe orthostatic hypotension and syncope. Moderate doses of laxative can be used simultaneously to forestall this complication. The pentamethylene compounds will definitely lower elevated blood pressures. They will also produce distressing postural hypotension in many, and an alarming lupus erythematosus-like disease in a few patients.

Potentiation of all the agents mentioned can be increased by the judicious use of chlorothiazide or hydrochlorothiazide (Fig. 4). Withdrawal of sodium, as sodium chloride, from the body often will restore normotensive levels, and it would seem reasonable that the virtues of the Kempner rice diet and similar low so-

dium regimes must have depended on their sodium depleting properties for their merit. Certainly, chlorothiazide (see references of Freis) has been proven to reduce hyperpiesia in a variety of diseases, from toxemia of pregnancy to premenstrual tension. Few, if any, patients will truly and faithfully follow a diet free of sodium chloride; therefore, chlorothiazide, or other thiazide compounds with their freedom from significant, serious side effects, should be considered in the treatment of every case of hyperpiesia.

Splanchnicectomy, and similar neurological procedures designed to reduce blood pressure, certainly must have benefited some patients. One or two recent cases examined, done by the originator of the operation, have exchanged hives and an extensive surgical scar for an elevated blood pressure. Restriction of splanchnicectomy to patients well under fifty years of age, and to those patients suffering from disabling headaches would seem to be reasonable at this time.

FIGURE 4  
HYDROCHLORTHIAZIDE



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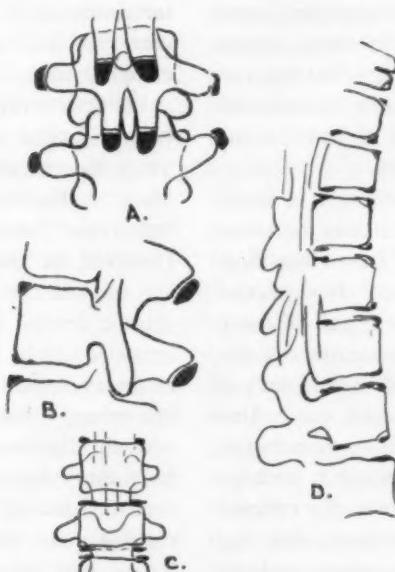
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#### CLINI-CLIPPING



Diagrams drawn from radiographs showing normal size epiphyses of vertebrae that have failed to unite and are separated from the complementary bony process by the metaphyseal unossified area. This area may give the erroneous impression of a fracture. A. Transverse processes and the inferior articular processes. B. Spinous processes and superior rim of the vertebral bodies. C. & D. Superior and inferior rims of the vertebral bodies (after Brailsford).

# The Problem of Lower Extremity

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**E**very physician whose practice includes adults will inevitably encounter patients whose symptoms include those related to chronic arterial insufficiency of the lower extremities due to arteriosclerosis. Depending upon his interests and experience, the physician's response to such a condition may vary all the way from an attitude of indifference and defeatism to that of thoroughgoing optimism. The latter, prevalent in some surgical circles, springs from the concept that the vast majority of these problems can be handled with the newer surgical techniques of blood vessel replacement or endarterectomy.

Confronted with such a problem, it is necessary to be able to accurately assess the situation from the standpoint of future handling. Can anything definitive be done? If so, should it be done presently or after a trial of more conservative measures? Do circumstances dictate a dim outlook which will permit only a sedentary life under symptomatic care? Unless these and related questions are rather promptly decided, treatment is apt to be haphazard and ineffectual. Moreover, the optimal period for definitive surgical therapy may slip by while irreversible incidents occur such as loss of tissue viability, loss of muscle and joint function, loss of distal vessel patency, or even loss of a job for the breadwinner.

## Making the Diagnosis

It may seem presumptuous to discuss diagnosis in such a common disease, considered by many to be almost a normal aging process in the American population. Nevertheless, there are certain areas of the problem which have escaped common knowledge.

**A**GE. It is no longer rare to find rather advanced atherosclerotic changes in young people in the third decade of life. Just as coronary artery disease affects its share of the young adult age group, so peripheral arteries can be diseased to the extent of causing symptoms demanding treatment. The relatively non-specific labels of neuritis, arthritis, and muscular strain should not be applied too hastily in otherwise hale and hearty young adults who complain of backache or tired lower limbs.

**D**IFFERENTIATION. It is true that there has been described a long list of diseases which affect the vascular system of the extremities. Many of these are not distinct disease entities, but rather descriptive symptom-complexes. However, the great bulk of patients of middle-age and older groups who present evidence of chronic arterial insufficiency of the lower extremities will be found to have arteriosclerosis as the etiological agent. Even in the younger age group, it has been pointed out that many who are diagnosed as Buerger's disease have, in reality, segmental arteriosclerosis. Other concomitants such as immersion foot syndrome, varicose veins, thrombophlebitis or fungus infection may serve to cloud the view of the underlying pathological abnormality.

**C**OmplAINT. Intermittent claudication is probably the most frequent symptom associated with peripheral arterial insufficiency. The word literally means "limping" or "lameness," but frequently conveys to the physician the classic description of cramping calf pain initiated by walking and alleviated by rest. If the symptom is restricted to this concept, many episodes of

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# Arteriosclerosis

claudication will be overlooked. For one thing, there may be no sensation of pain in any form, but rather, a sense of profound weakness of the leg. The patient experiences a feeling that the limb will collapse under his weight if he does not immediately rest. Subsequently, the patient will limp or carry a cane not because he has pain in the extremity, but because he is fearful of it giving way. Of those who have pain, it is well to remember that if its cause is due to deficient arterial circulation, mere rest in the standing position will relieve it; if the pain is of joint origin, only a non-weight-bearing position will suffice. The familiar complaint of muscular leg cramps which occur at night while in bed have no particular relationship to arteriosclerotic obliterative vascular disease.

## Defining the Problem

To make a diagnosis of peripheral vascular arteriosclerosis is only to identify a disease process and not to define the particular pathological entity of that process which is the source of trouble to a given patient. In other words, arteriosclerosis may manifest itself in various patterns in the lower extremities. This is not merely an artificial, academic point, but a matter of utmost significance to proper evaluation and therapy. In this regard, two areas of consideration are of clinical importance: first, the predominant arterial layer involved; second, the anatomic extent of the process within that layer.

## Superficial Versus Deep

For practical purposes, the lower extremities consist of two functional elements: 1. the

muscles; 2. the skin and digits. For each of these there is a separate system of neurovascular supply which can be labeled "deep" for the former, and "superficial" for the latter. It is unlikely that arteriosclerosis could involve the deep arterial system without affecting the superficial arteries to some extent, or vice versa. Yet a large percentage of patients have signs and symptoms confined to one area only. It is important to determine whether the prime difficulty resides in ischemic muscle or in inadequate nutrition of the skin and digits. Both the type of therapeutic attack and the prognosis for the limb hinge largely on this aspect.

An extremity is never lost because the circulation to the muscles is reduced. Extremities are lost because the circulation to the skin and digits is reduced. Unfortunately, a large proportion of these are not amenable to direct surgical attack since the arteries involved are the peripheral vessels of minute caliber. In addition, the loss of integrity of the smallest area of skin in an extremity with deficient circulation introduces localized infection which may then upset the balance of limb survival. Treatment must center on the infection as the major problem.

On the other hand, deficient arterial supply to muscles can restrict an individual to a sedentary life with resulting loss of earning power. The objective findings may be extremely meager, so that on casual examination the physician may be inclined to minimize the problem. Yet, claudication in the calf, thigh, buttock or low back may be severe. It is in these individuals particularly that recent direct surgical procedures have proven so successful.

## Anatomic Distribution

One of the surprising findings uncovered by the surgical interest in peripheral arteriosclerosis was the fact that arterial involvement may be considerably restricted or segmental in distribution. The classic concept of tortuous arterioles of the eye grounds, pipe-stem radial arteries and calcified leg vessels has given way to the more accurate picture of single or multiple short areas of atheromatous block in many



FIGURE 1



FIGURE 2



FIGURE 3



FIGURE 4

FIGURE 1 Marked, generalized atheromatosis of the deep and superficial femoral arteries. Not suitable for direct surgical procedures. FIGURE 2 Occlusion of the popliteal artery with no visualization of adequate distal patent arterial tree. Not suitable for direct surgical procedures. FIGURE 3

Long, partial occlusion of the femoral artery with full patency of the popliteal and distal arterial tree. Good candidate for by-pass graft. FIGURE 4 Short, segmental occlusion of the upper femoral artery with patent distal arterial tree. Ideal for endarterectomy.

cases. Actually, as Wright<sup>1</sup> has pointed out, palpable pipe-stem arteries and extensive arterial calcification of extremities as seen radiologically, are evidence of the Monckeberg type of medial sclerosis which bears no direct relationship to the problem of vascular occlusion.

It is the intimal lesions which favor occlusion, and from the standpoint of surgical evaluation, these lesions may be grouped into clinical types.

Basic Types of Involvement are:

- A. Aorto-iliac segmental,
- B. Distal Segmental,
- C. Combined segmental and
- D. Diffuse.

The aorto-iliac involvement most frequently manifests itself in the familiar pattern of the Leriche syndrome. The combination of atherosclerotic narrowing plus thrombosis may completely occlude the terminal aorta and proximal iliacs, producing claudication of the buttock

and low back muscles, and frequently, impotency. The collateral circulation to the lower extremities is usually adequate so that the common signs and symptoms of more acute peripheral arterial insufficiency are absent. This area is probably the most favorable for direct surgical procedures because of the large caliber of the vessels and the restricted area of involvement. The results of either endarterectomy or vessel graft replacement are encouraging.

The distal segmental occlusions do not fall into any single clinical pattern. They are most frequent between the point at the lower end of the femoral artery near its continuation into the popliteal, and the point of the femoral bifurcation just beyond the inguinal ligament. The constricting action of the adductor hiatus at the distal end of Hunter's canal through which the femoral artery passes may be related to the occlusive process. Direct surgical attack of the femoral and popliteal arteries is

practicable, but the results are not as consistent as in the aorto-iliac region. Distal to the popliteal, the small vessel caliber limits direct approach.

It is obvious that combinations of these localized lesions may occur so that spotty occlusions of the iliacs and one or more femorals may exist together.

The important element in defining the problem of a patient with occlusive arteriosclerotic disease of the lower extremities is the early determination of whether or not the lesion is amenable to direct surgical procedures. When this point has been determined and a decision made, the future management can then be rationally planned. When this decision is not faced early in the course of the disease, treatment is apt to be patterned wholly on the symptoms rather than with a definite goal in mind.

### Evaluating the Extent

In order to render optimal treatment, a specific evaluation of the extremities must be made. The array of equipment and the variety of tests available are so numerous as to discourage the uninitiated. These include instruments such as ergometers, oscilometers and thermocouples as well as the histamine flare test, various drugs to test sweating, etc. In actual practice it is sufficient to rely largely on a few salient points in the patient's history, coupled with direct observations of the extremities.

#### Check-List of Examination:

1. Skin—Temperature, moisture and infection
2. Vessels—Palpation and auscultation
3. Pallor-flush test
4. Claudication time

In regard to the first item, it is sufficient to note gross differences in skin temperatures with the back of the hand in comparing upper and lower leg as well as opposite member. Increased sweating and a tendency for interdigital skin maceration are important. Relatively minor infections such as paronychia and fissured lesions of Trichophytosis can readily flare into

major proportions in a limb with reduced blood supply.

Palpation and auscultation of peripheral arteries are of great significance in localizing the site of obliteration. With a little practice, normally pulsating vessels should be readily palpable at the femoral, popliteal, posterior tibial and dorsalis pedis locations. The most frequent error in palpation of pulses is feeling a pulse that actually is not present. Synchronization of the palpated pulse with both the examiner's and the patient's radial pulses will avoid this error. Auscultation over the femoral and popliteal arteries will occasionally reveal a bruit indicative of either aneurysm, A-V fistula or partial lumen obstruction at a site just proximal to the point of auscultation.

There are two popular misconceptions which should be corrected. First, complete absence of palpable pulses in either or both lower extremities is not an unfavorable finding. As a matter of fact, this is frequently the hallmark of a localized occlusion in the iliacs or distal aorta with a good chance of an excellent result from direct surgical approach. On the other hand, the presence of palpable pulsations in the foot, in the face of claudication or loss of tissue viability is usually an unfavorable sign, indicating occlusion of numerous small endarteries. A frequent finding is palpation of a femoral pulse with absence of pulses distally. This indicates usually, but not necessarily, a segmental block of the femoral artery somewhere in Hunter's canal. This is usually a favorable lesion for direct surgical attack.

The pallor-flush test is simply done, can be accurately determined and yields valuable information. This consists of elevation of the legs with the patient supine, and then observing the toes and adjacent foot for pallor. In the presence of occlusive arterial disease, the toes will blanch to varying degrees of pallor within two minutes. From this position the legs are then rapidly placed in dependency by having the patient assume a sitting position. Normal pink color should return within twenty seconds; any persistence of pallor beyond that time is indicative of occlusive disease. A fur-

ther period of dependency for several minutes will oftentimes produce a bright red, and then a cyanotic hue in the toes of the diseased limb.

Claudication time is best learned from the patient's story of the distance he can walk on the level outdoors. This seems to be a more realistic clinical appraisal than the treadmill. If claudication is a prominent symptom, most patients will have a fairly accurately detailed description of its duration and character. A notation of claudication time and distance is wise in order to evaluate results of therapy.

Routine x-ray examination of the lower extremities is not particularly valuable. However, in attempting to differentiate arteriosclerosis from other entities in younger patients with occlusive disease, a lateral view of the lumbar spine is helpful. A surprising number of individuals with no other evidence of atherosclerosis will show calcification in the distal aorta. This is masked by the spine on an A-P view, but stands out readily in the soft tissues anterior to the fourth and fifth lumbar vertebrae in a lateral view. Arteriography is essential but is best left to the discretion of the surgeon to be done as indicated.

### Management of the Problem

**GENERAL CONDITION.** Frequently the concern over an extremity obscures the overall view of the patient's general physical condition and life expectancy. As has been mentioned, arteriosclerosis is a generalized disease which is associated frequently with heart, brain and kidney involvement. If a given patient has limited life expectancy or has serious cardiac disease which renders the surgical risk high, it is foolish to recommend strenuous measures to save a limb and thereby risk a life. On the other hand, a prolonged period of so-called conservative treatment in an aged person may be harmful to both the physical status and the morale if it involves extended bed rest or inactivity. In such a patient it is conceivable that direct arterial surgery or even amputation might be the more conservative approach if the prospects are good that the patient will thus be returned rather promptly to activity.

Diabetes mellitus is a frequent complicating factor in this condition. It has been estimated that occlusive peripheral arteriosclerosis occurs eleven times more frequently, and appears a decade earlier in diabetics than in non-diabetics. However, as Edwards<sup>2</sup> insists, one should not be dissuaded from active treatment measures. The very facts that the results in diabetics have been poorer and the disadvantages greater, only point to the conclusion that there is greater need for diligent treatment. In a limb with both infection and deficient circulation, it is mandatory that the infection be given the first priority in management of the problem.

**SURGERY.** Surgical procedures will undoubtedly gain popularity until such time as treatment of the underlying cause of arteriosclerosis is possible. The various procedures currently used can be briefly grouped.

#### A. Direct

1. Arterial grafts—replacement or by-pass.
2. Endarterectomy.

#### B. Indirect

1. Sympathectomy.
2. Amputation.

A detailed discussion of surgical procedures is beyond the scope of this paper. Only the experience of a given surgeon can adequately evaluate the surgical possibilities for a particular patient. There are at the present time ardent supporters of endarterectomy, those who champion grafting procedures of all types, and naturally those who utilize both procedures. In any event, the prime requisite for success in any procedure directly on an occluded artery is an adequate "run-off," or patency, of the arterial tree beyond the point of occlusion. Without this, the best procedure is doomed to failure by virtue of decreased blood flow and subsequent thrombosis at the site of surgery. Second to this in importance is the demonstration of the segmental or localized aspect of the occlusive process. The shorter the area of blockage, the better the chance of surgical success. Thirdly, the larger the caliber of the artery involved, the better

the results in terms of continued patency post-operatively. The accompanying illustrations show a few of the possible problems together with the type of treatment indicated.

Sympathectomy is not universally accepted in the management of arteriosclerotic occlusive disease. While it has its champions, there are those who claim it has no place in the treatment of this entity. The latter would be hard pressed to gainsay the beneficial results of the procedure reported by a number of clinics with a large experience. Thimmig, et al.<sup>3</sup> have concluded that sympathectomy continues to play a prominent role in the treatment of arteriosclerotic occlusive disease of the lower extremities in spite of the newer direct surgical approaches.

One of the major difficulties with lumbar sympathectomy is in predicting which patient will benefit from sympathectomy and which will not. The consensus of opinion now seems to be that such determination is well nigh impossible preoperatively. However, in experienced hands, the extraperitoneal lumbar sympathectomy is a procedure of extremely low mortality and morbidity. Occasionally, its results are dramatic; frequently, they are salutary.

#### What to Expect from Sympathectomy

1. Limitation of gangrene and preservation of the distal extremity. It has been estimated that less than ten percent of the normal, resting blood flow to an extremity is necessary to sustain the life of its tissues. Thus, the problem in an obliterated main artery becomes one of a delicate balance to maintain that ten percent by one means or another to sustain the limb during the prolonged period of collateral blood flow build-up. Sympathectomy need only provide a very small added increment of blood flow to accomplish its intended purpose. Further, there is no doubt that many extremities with deficient arterial circulation have autonomic imbalance producing excessive sweating and coolness which are conducive to skin maceration and bacterial proliferation. These are frequently converted to warm, dry feet by sympathectomy wherein infection is more eas-

ily controlled and small areas of gangrene will desiccate and demarcate.

2. Protection against future main vessel occlusion. Smithwick<sup>4</sup> claims that direct surgical attack on an occluded artery removes the stimulus to collateral circulation, while sympathectomy does the opposite. He further maintains that direct surgical procedures are at times more appropriately delayed in order to observe the effects and outcome of sympathectomy.

3. Improvement of claudication. This is probably the most controversial point and must be accepted or rejected on the basis of one's own experience. Both Edwards<sup>2</sup> and Smithwick<sup>4</sup> estimate that fifty to seventy-five percent of patients with claudication are improved by sympathectomy. Allen, Barker and Hines<sup>5</sup> maintain that, contrary to some statements in the literature, the capacity for arteriolar dilatation is often as great as, and sometimes greater, in arteriosclerosis than it is in thromboangiitis obliterans, since the small arteries are much less frequently affected by organic changes.

#### Medical Management

Little has been added in recent years to significantly alter the tried and true supportive measures of the past which were aimed at resting the extremity, preventing and treating even the most minor infection, maintaining joint and muscle integrity, and avoiding exposure of the limb to all factors that tend to produce vasospasm such as coldness, dampness, certain drugs and emotional factors. A few items deserve special emphasis:

1. As Edwards<sup>2</sup> states, there is no effective vasodilator drug in arteriosclerosis.
2. The presence of Trichophytosis, often regarded as inconsequential, may produce skin lacerations which open the door to infection, ulceration and gangrene. Prompt, intense treatment with twice daily immersion of the foot in a 1:8000 potassium permanganate solution, followed by thorough drying and dusting with undecylenate powder may favorably upset the balance toward limb survival.

3. Tobacco is harmful. While it is true that tobacco may not play a major role in arteriosclerosis as it does in Buerger's disease, it is merely a matter of degree. Nicotine and associated products of tobacco smoke are vasoconstrictors.

4. Comfortable room temperature is best. Applying heat to an extremity with deficient circulation is comparable to subjecting the limb to a long distance run. The increased metabolic demands of the local tissues far exceeds the questionable gain from vasodilatation. Unhappily, the antithesis does not hold—application of cold is definitely more damaging as a vasoconstrictor than it is helpful in decreasing tissue metabolism.

The management of occlusive arteriosclerotic problems of the lower extremities has much to

offer if consideration is given to the fact that it is a part of a generalized, irreversible disease. In spite of the fact that measures aimed at the basic causal factors are not yet available, recent surgical attacks directly on the involved arteries are proving to be most encouraging. This approach was brought about by the discovery that in a great many arteriosclerotic occlusions, the lesions are localized or segmental in extent. It is likely that as time and experience accumulate, a very substantial number of afflicted limbs will be salvaged by these methods. For those limbs not amenable to direct surgical approaches on the arteries, wise medical management coupled with judicious use of lumbar sympathectomy or properly timed amputation will restore these individuals to comfort and usefulness.

### Summary

1. A brief appraisal of the frequently common problem of arteriosclerotic occlusive disease of the lower extremities is made.

2. A review of some of the more obscure diagnostic features is then given such as age, differentiation from other diseases, and indefinite symptomatology.

3. Specific definition of the problem is then emphasized as being a prerequisite to recommending future management of a given patient.

This necessitates viewing the pathological process as involvement of deep and/or superficial arterial systems, its extent of anatomical distribution, and its basic type from the standpoint of possible direct surgical attack.

4. A check list of clinical findings to aid in such an evaluation is then given.

5. There follows a brief discussion of the salient features available in the surgical and medical armamentarium.

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# Newer Progestational Agents

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**D**uring the past several years, both the biochemist and the clinician have been searching for new compounds which are progestationally active and clinically effective. This search has been given great impetus because of the several limitations that are associated with progesterone.

Progesterone cannot be given orally, but has to be given intramuscularly, buccally or vaginally. Occasionally, in order to obtain a clinical response, a high dose of this steroid may have to be used. Oral progestogens have been used in the past, such as ethisterone and anhydro-hydroxyprogesterone. These compounds have a limited degree of potency in the usual dose range of 10 to 25 mgms. daily. Vaginal suppositories of progesterone have shown considerable effectiveness, but absorption varies and may at times be completely inadequate.

These rather pertinent problems have led many investigators recently to study compounds which may have adequate progestational effect in a dose range that would be clinically acceptable to the patient.<sup>1-4</sup> Among these compounds

studied have been 17-alpha hydroxyprogesterone caproate (available as Delalutin<sup>®</sup>), 17-alpha acetooxyprogesterone (available as Prodox<sup>®</sup>). The 19-nortestosterone compounds that are clinically effective are norethynodrel (available as Enovid<sup>®</sup>) and norethindrone (available as Norlutin<sup>®</sup>).

In comparing these various compounds one must keep in mind that progesterone itself has as its limitations (1) the absence of an oral response, (2) short duration of activity and (3) limited solubility of the product in suspension.

Hydroxyprogesterone caproate has the advantage of a long duration of action and a high solubility so that a single dose of 250 mgms., given with estrogen if necessary, will simulate the action of the corpus luteum. For these reasons, this compound has been proved useful and valuable in the treatment of certain gynecologic disorders. In the pregnant patient, the advantage of this compound is such that it can be given in a single dose weekly, rather than in the daily doses as was necessary with progesterone itself.<sup>5</sup> Although this compound has no oral activity, the acetate (Prodox) does have oral potency.<sup>6</sup>

The 19-nortestosterone compounds with progestational activity are of great interest to the clinician. These compounds have a high oral potency, five times as potent as ethisterone itself. They also possess a high antigenadotrophic activity permitting easy inhibition of ovulation. There is an inherent estrogenic effect which enhances their ability to produce rather rapid endometrial hemostasis. These compounds also have a marked effect on the endometrial stroma with the production rather easily of a decidua tissue response.

Disadvantages to these compounds include their androgenic effect which is apparently minimal for the compounds now commercially available. This effect has been implicated as a cause for possible virilization of the fetus when the compound was given during pregnancy. Some patients who take these compounds complain of nausea, vomiting, bloating, and breast pain.

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### Clinical Applications

● *Excessive uterine bleeding.* Pure progesterone even in high dosage, has only limited value in controlling excess uterine bleeding of a dysfunctional nature. However, in the 19-nortestosterone compounds, there are now available progestins that are markedly hemostatic.

In order to control excess uterine bleeding, a patient is given 10 mgms. of either norethindrone or norethynodrel every four hours for 6 doses. The patient is then maintained on 10 mg. daily of the compound for a period of twenty days. At this point the medication is withheld and a simulated normal menses will follow.

It is interesting to note, that when the patient with excess uterine bleeding is treated with these compounds, it has been our experience that when bleeding does not subside within seventy-two to ninety-six hours, one must look for an organic cause for the bleeding. Thus, it is possible to consider that these compounds have both a diagnostic and therapeutic specificity in the management of excess uterine bleeding. If bleeding does not stop in ninety-six hours, we have found it wise to consider doing a diagnostic dilatation and curettage.

● *Secondary Amenorrhea.* In managing the problem of secondary amenorrhea, the duration of the symptom is a most important factor in determining which progesterone compound can be used most effectively. In amenorrhoeas of less than six months duration, there is usually sufficient estrogen still present to allow for an estrogen primed endometrium to respond to progesterone with withdrawal bleeding. In the presence of an estrogen primed endometrium, one might use 250 mgms. of 17-alpha-hydroxyprogesterone caproate to incite withdrawal bleeding. There should be withdrawal bleeding in eight to ten days after the injection.

If however, the amenorrhea is of longer than six months duration, one must always check to see if there is enough estrogen present to prime the endometrium. This can be checked by doing a vaginal smear for function, using a wet smear technique.<sup>8</sup>

A great advantage of the 19-nortestosterone

compounds, in the management of secondary amenorrhea, is the inherent estrogenicity of these compounds.

Norethynodrel has a greater amount of estrogenicity than does norethindrone. Either compound may be given in doses of 10 mgms. daily for twenty days. This will result in some type of bleeding. This bleeding occurs from an atypical secretory type of endometrium. The stroma-producing effects of these compounds is somewhat greater than the glandular effect. The glands never develop, as a rule, beyond day nineteen, but the stroma on many occasions produces a pseudo-decidua response.

Having produced the first bout of withdrawal bleeding, the patient may then be put into a cycle by using these compounds for a ten-day period every four weeks, 10 mgms. a day to enhance pituitary gonadal function. This cycling should be continued for three cycles. The patient is then observed for several cycles to follow her response.

● *Dysmenorrhea.* Because of the high anti-gonadotrophic potency of the oral progestins, we now have available a group of drugs that would allow for the inhibition of ovulation, and withdrawal bleeding that will not be of an excess nature. As a diagnostic test for evaluating dysmenorrhea in a patient, it is suggested that the individual be given 10 mgms. a day of either 19-nor compound from day five to day twenty-five of her cycle. This will allow for anovulation and the presence of a painless menstrual flow. When treating dysmenorrhea, by creating anovulation, it is suggested that the patient be treated for only three consecutive cycles and then allowed to rest.

● *Endometriosis.* The simulation of a pseudo-pregnant state has been found to be of clinical value in the management of endometriosis.<sup>9</sup> The production of a pseudo-pregnant state can be used as (1) the medical management of the disease, (2) to prepare the patient for surgery or (3) as a postoperative adjuvant in the management of recurrent endometriosis. The patient is started at a daily dose of 10 mgms. and increased after two weeks to 20 mgms. daily. The patients are maintained on 20 to 40 mgms. a

day for a period of four to six months. The regression of the endometriosis is usually quite gratifying.

If bleeding should occur while the patient is under therapy, 10 mgms. of the compound given every four hours will usually act as a hemostatic agent in three to four doses. When the medication is continued, the patient should be maintained at a 10 mgms. higher dose level daily.

● *Anovulatory Infertility.* Over the course of many years, both progesterone and ethisterone (anhydrohydroxyprogesterone) have been used in the management of anovulatory infertility or poor luteal function. Among the suggested explanations for the use of these compounds has been (1) the production of a more adequate endometrium for nidation (2) the inhibition of gonadotrophins with the release of optimum amounts of gondotrophins in the next cycle and (3) the release of a menotoxin from a secretory type of endometrium. This stimulates pituitary function through a possible neurohumeral mechanism.

The newer 19-nortestosterone compounds have also been of value in the management of this particular problem. The use of these compounds has been advocated according to the following plan: (1) to obtain a rebound phenomena following antigenadotrophic therapy (2) to enhance the formation of nidatory endometrium with use during the luteal phase only (3) to simulate a pseudo-pregnancy and withdrawal of the medication if the patient is not pregnant. In the first plan the patient is given 10 mgms. daily of the compound from day five to day twenty-five. This regime is carried out for three cycles. Following the withdrawal of the gonadotrophic inhibiting agent, there is a release of optimum amounts of gonadotrophins to assure a good rebound effect with ovulation taking place.

In the second plan the compound is given in doses of 10 mgms. daily from day sixteen to day twenty-five of the cycle. This is to enhance the formation of a more responsive endometrium for nidation. In this plan the physiologic action of the corpus luteum is simu-

lated and the normal mechanism is not disturbed.

In plan three the compound is given from day eighteen and continued to one week beyond the expected date of the menses. A pregnancy test is performed at this time. If the test is positive, the medication is continued. If the test is negative, however, the medication is withdrawn and the patient is allowed to menstruate. This plan is repeated in the same manner in the next cycle.

If one wishes to use 17-alpha hydroxyprogesterone caproate for this effect, it can be used in plans two and three in the following manner. In plan two, 250 mgms. is given day sixteen. In plan three, 250 mgms. is given day eighteen and day twenty-seven.

● *Threatened and Habitual Abortion.* The value of progesterone in the maintenance of a normal human pregnancy has been known for many years. The ability of this steroid to maintain a pregnancy in an oophorectomized woman has been demonstrated on many occasions. As yet, this observation has not been made with any definite validity for any of the newer progestins.

Recently, Reifenstein has shown that 17-alpha-hydroxyprogesterone caproate can offer the same results in the management of both threatened and habitual aborters as other methods of therapy.<sup>5</sup> When using this compound it is suggested that it be given in a dose of 250 mgms. weekly.

The 19-nortestosterone compounds, when used, offer the advantage of oral administration and ease of patients' acceptability. The suggested dosage for the oral compounds, when used in maintenance of pregnancy, is 10 mgms. daily during the first sixteen weeks of gestation and 20 mgms. daily beyond this point. Therapy should be discontinued after the thirtieth week of gestation.

In using newer progestins to support a pregnancy, when there is a history of threatened abortion or habitual abortion, one must be aware of the problems that may arise. Firstly, there is an increase in the incidence of missed abortion and all the complications that result

therefrom. Secondly, it has been reported recently that there may be a relationship between maternal use of progestins and an increased incidence of masculinization of the female

fetus.<sup>7</sup> In our experience, only one premature infant might have had clitoral enlargement which could be attributed to the use of a newer progestin by the mother during pregnancy.

### Summary

*A discussion of some of the newer progestins has been presented. Their use in obstetrics and gynecology is discussed. These compounds offer many advantages over pure progesterone,*

*among which are oral activity (19-nortestosterone), higher solubility (17-alpha hydroxyprogesterone caproate), and constant level of activity after administration.*

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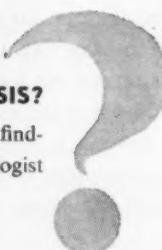
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### WHAT'S YOUR DIAGNOSIS?

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SEE PAGE 33a



# Obscure Sinus Infections

*Obscure nasal sinus infections which  
frequently affect the patient's general health*

**WESLEY C. THOMAS, M.D.**  
Brunswick, Georgia

“Focus of infection” is a phrase which is, today almost forbidden in stylish medical literature; but I am sure that local infections still exist which produce annoying, distressing and, sometimes serious symptoms not involving the infected areas alone. It is not strange that some dislike the mention of the focal infection idea, since it was so much overworked just a few years ago. Quick acceptance of such ideas and excesses in their usage seem to be a trait of the medical profession. Are we not just now going through the same process in the routine use of antibiotics? At the height of the focal infection fervor many patients were declared to be focal infection cases after incomplete investigation and subjected to various operations for the removal of suspected tissues. When such things take on the nature of a fad they must surely change, but truth is unchangeable. The truth that localized infections do sometimes cause trouble in parts of the body not in contiguity with the infected area is unquestionable. This means to me that a careful thorough study of cases of doubtful diagnosis should not give way to a trial and error process such as the last few decades have seen. Brown and Goodhill<sup>1</sup> have furnished their opinion on this subject, with special reference to latent nasal sinus infection.

The medical world, however, has not always

accepted suggestions for advancement with exaggerated zeal. It was at least fifteen years after Pasteur's epochal discoveries before Lister began to apply the antiseptic idea to surgery; and many years after Lister's work before “surgical cleanliness” was generally accepted in America. Much more recently—some thirty years ago—it was discovered and proven by several investigators that nasal sinus infections with little or no pus formation are very frequent. This important truth has not been accepted by many rhinologists, and so far, as I have been able to learn, the subject has had little or no consideration in the general medical literature. It is my hope to increase interest in this subject as well as to give an account of some of my convictions on this interesting variant type of coccal infection, and to make a report of some of my work with it.

Since the serious study of paranasal sinusitis goes back only about three decades, and the better understanding of it, only one decade or a little more, this source of infection did not get the best of attention during the time of most focal infection thinking; and even now there is room for improvement in the amount of work being done on this subject. According to Eggston,<sup>2</sup> a student in search of information on the histopathology of the ear, nose and

paranasal sinuses will have great difficulty in gathering data from various periodicals and chapters in textbooks for the study of this subject. Fitting here is a quotation from the same authority "No necropsy is completely done if the ear, nose and accessory sinuses are not studied grossly as well as microscopically." Almost none of the hospitals of our country ever do such a complete necropsy. I have no doubt that the bacteriologic study of the paranasal sinuses needs some stimulation also. Frequently washings from a maxillary or sphenoid which is known to be infected produces no growth on culture. The bacteria evidently proliferate in the mucous membrane of the nose and sinuses, not on the surface. Goodman et al<sup>3</sup> report "In sinus tissue removed surgically, pathogenic bacteria were recovered consistently despite negative bacteriologic studies obtained previously." Such obscure lurking infection would surely be expected to affect the health of the carrier in many ways.

The rhinologic literature of recent years contains statements of many authorities to the effect that there is still a place in the etiologic study of certain constitutional diseases for the focal infection idea. Any search for infection must include in its scope the paranasal sinuses, and especially with the latent (obscure, quiet, non-purulent) type in mind. This condition cannot be detected by x-ray examination alone. Careful rhinoscopy, irrigation and culture must be done. Often the therapeutic test is of greatest value.

The etiology of the latent sinus infection is the same as that of the type with generous pus formation. It is well established that the forerunner of bacterial rhinitis and paranasal sinusitis is the acute cold (coryza) or an allergic rhinitis. The starting point of a cold is viral infection. Acute nasal allergy has almost identical symptoms as the viral infection and almost identical consequences. Each causes sneezing, rhinorrhea, edema, and malaise. The watery rhinorrhea in each case washes away the protecting mucous blanket, changes the pH to the alkaline side and offers a moist protected area of higher than normal temperature for

the invading bacteria. The alkaline pH and possibly the higher temperature caused by the poor nasal ventilation retard the action of the lysozyme, the natural antibacterial substance in many body tissues. The bacterial invasion starts very soon after the way is cleared for it in this manner.

The bacterial flora seem to be the same for the latent as for the purulent rhinitis and sinusitis. *Staphylococcus*, *streptococcus*, and *pneumococcus* are the most common but many others have been found in the area by culture.

The *staphylococcus* and *streptococcus* have been called pyogenic bacteria since their discovery, and for almost as long the *pneumococcus* has been known as a trouble maker with or without the formation of pus. Even in possession of this knowledge some seem to find it difficult to believe that this offender can grow and make trouble in the nasal mucous membrane without creating pus.

It is my intention here to emphasize the nonpurulent type of sinus infection; but the number of instances of the purulent type which are overlooked or neglected is astonishing. The symptoms of each type are, the same except that nasal obstruction and profuse discharge are more pronounced in the purulent cases. And surprisingly enough pain is less troublesome in the purulent type, except, of course the very acute cases. Frequently in cases of deflected septum, the purulent type of infection will be found on the concave side and the nonpurulent type on the convex side. I have read no theories as to why some instances of sinus infection are almost entirely free from pus while virulent pyogenic cocci are still in the membranes, and so far as I know no factual studies have been made.

My theory as to the cause of this phenomenal change in the pyogenic bacteria as they continue their habitation in the nasal and sinus mucous membrane without formation of pus is the low temperature of the contents of the nasal fossae and the paranasal sinuses. The temperature of the nasal mucous membrane is normally 85° to 90° when the chambers are open and as well ventilated as the patient

desires. This temperature is not the optimum for growth of the pyogenic cocci; consequently there is some form of attenuation, or possibly we could say some form of hibernation, which takes place until the optimum temperature is reached again. When the nasal chambers are blocked by swelling and discharge, the temperature may rise to 98° or more, and the formation of pus starts up again.

While we had latent infection of the nasal sinuses before the use of nasal decongestants became the world-wide custom, I believe it is much more common now, due largely to the widespread, injudicious use of the nasal ventilating drugs. I believe this matter of temperature explains the summer reactivations some patients complain of. I have a rather large group of patients who present themselves only in summer for the relief of nasal blocking and troublesome mucopurulent discharge. This evidently accounts for the names "summer catarrh" and "Turgescent rhinorrhea." I feel sure that these cases are not due to extrinsic allergens, since a very short period of nasal treatment eliminates the symptoms entirely.

Some twenty-five years ago I could see evidence to convince me that almost all perennial nasal allergy is bacterial allergy due to the products of intrinsic infection of the nasal and sinus mucous membranes. At that time there was little in the rhinologic literature to support this opinion, but in the last few years this has changed. In recent years expressions of this opinion are abundant in the writings of many respected authors. Dintenfass<sup>4</sup> considers bacterial allergy to be intrinsic in its origin, resulting from bacterial antigens acting directly on the nasal mucosa. Voorhees<sup>5</sup> and Surber<sup>6</sup> also support this opinion. Lederer<sup>7</sup>, in 1952, ventured the statement, "It is questionable which comes first, the allergy or the suppuration." In my area we have seasonal pollens to deal with. The great majority of cases result from pecan blossoms, the grasses, and autumn weeds. These cases however are very different from the bacterial cases mentioned above. The intrinsic bacterial cases have a mucoid discharge, dull red, thick mucosa, nasal

voice and more headache than the pollen cases. In cases of uncertainty the therapeutic test will clear up all doubt.

Every physician's first interview with every patient should be a carefully taken history; but the history has little value unless the physician is just as careful to contemplate the relation of each symptom or syndrome to the underlying cause of his patients' trouble. The symptoms I want to discuss are numerous and varied, and, of course, are not always caused by paranasal sinus infection, but a majority of all cases are. Table I shows the percentage in my office practice over a period of four years.

To preface my discussion on symptoms of bacterial paranasal sinus infection, I should like to quote a few lines from Surber (to anyone who has studied this condition it is the simple uninvolving truth). "The condition (paranasal sinusitis) is remarkable for the variety of symptoms from case to case, and for the ability to simulate and exaggerate symptoms and complications of other diseases."<sup>6</sup> From this it is learned that the symptoms of paranasal sinus disease can be brought about by other etiology and to make the correct diagnosis is often not easy.

### Headache

Headache is the first symptom which should be mentioned for it is the most harrying as well as the most common. It is often unilateral from the frontal area over the upper half of the head to the occiput. This entire area may be involved or any spot in the area as supraorbital temporal, parietal, mastoid or occipital. Many cases complain of pain across the brows and bridge of the nose. In the subacute and chronic instances of the disease, the pain may be worse in the afternoon but may be as bad at night. The longer the disease runs the more apt is the pain to be constant. A very engaging type of headache which belongs to the sinusitis group is one that comes on only on use of the eyes for close work. On account of this, patients and physicians alike too often consider it an eye strain headache. Almost

**TABLE I TREATMENT OF OBSCURE PARANASAL SINUS INFECTION**

	RE-LIEVED	IM-PROVED	UN-IMPROVED
Headache	558	120	133
Sore Throat with Nasopharyngitis	313	62	21
Sore Throat with No Inflammatory Signs in the Pharynx	114	6	17
Nervousness or Neurosis	132	60	54
Vertigo, as chief or Only Symptom	97	10	18
Nausea and Gastric Irritation	54	8	46
Cough in Children, With or Without Bronchitis	185	72	9
Cough in Adults, With or Without Bronchitis	129	41	68
Perennial Nasal Allergy	248	37	9
Pain in Shoulders	27	6	0
Anosmia	16	3	2
Photophobia, With No Eye Inflammation	8	0	0

four percent of the cases in Table I which have been relieved by nasal treatments are in this group. Many of them had had several minor changes in glasses; others had been given glasses which they did not need, and still others have had one or more refractions to find that there was no error. None of this type have been seen which could be classed as psychogenic or tension headache, and all respond very quickly to nasal treatment.

Pain and tenderness in the eyeballs, in the absence of any signs of eye pathology, usually goes along with the headache, but many patients will be seen who give this as, an only complaint. The pain is usually not severe but it is disquieting to the patient because of the fear of eye disease.<sup>10</sup> This too, is invariably relieved by nasal treatment.

As a supplement on headache, the following patient's case record is briefly reported. He is a typical case of this type except that his

recurrences have been more frequent than the average:

Mr. N. M., age 55, a skilled mechanic, employed in a local manufacturing plant. He was first seen in May 1955. Chief complaint—pain in the left eyeball, and over the left supraorbital region and extending back to the occiput. Less disturbing to him were sore throat and insomnia. The headache had been getting worse for ten years or more. At the time of his first visit he could only rest at night by taking quantities of medication prescribed by various physicians who had treated him over a period of several years. However he had lost very little time from work in this period. Just a week before he had been examined carefully by his physician and no signs of defects were found. On examination he was found to have a marked deviation of the septum to the left, turbinates on the right were much enlarged, and the middle meatus contained a small amount of mucoid material. On the left the middle turbinate was crowded by the septum but there was ample breathing space below. The anterior sinuses were clear on transillumination, x-ray study showed some clouding of both maxillary sinuses. Postnasal discharge was small in amount but purulent in appearance. After cleaning the nasal fossae and light suction a small amount of mucoid material was aspirated from the left middle meatus. This produced a pure culture of *Staphylococcus aureus*. The maxillary sinuses were irrigated and found to contain flakes of mucopurulent material.

He was advised to have a submucous resection to be followed by displacement treatment and further maxillary sinus irrigations. He refused to have the operation but chose to take the displacement treatment and irrigations. After six visits to my office for this treatment, including two maxillary sinus irrigations with instillation of a penicillin and streptomycin mixture his headache and sore throat were relieved entirely. In November he had a recurrence of the pain and again six treatments with no maxillary irrigations relieved his pain until October 1956 when he

**TABLE 2 HEADACHE CASES DIAGNOSED AS MIXED TYPE HEADACHE**

Each had signs and symptoms of latent nasal sinus infection and also signs of other types of headache. The percentage of improvement in these cases was surprising to me.

	IMPROVED	UNIMPROVED
Migraine	6	64
Tension Headache	22	16
Myalgia	27	9
Psychogenic	23	14
Cardiovascular Renal Disease	19	24
Post Traumatic Headache	23	4

returned for relief. This time only four treatments were needed. In April 1958 and January 1959 he returned for treatment, and each time the result was the same. I still believe a submucous resection would give him relief for years at a time instead of months as in the past four years and have so advised him; but he has elected to continue on the short term relief. I have been able to follow a number of cases of a similar nature who remain free from symptoms for years at a time after this operation.

#### Sore Throat

Sore throat with purulent postnasal discharge and nasopharyngeal inflammation is the next symptom in point of frequency. The cases in Table I listed under this symptom are those which had sore throat or postnasal discharge as the chief complaint though some had headache, cough, etc. as minor complaints. The posterior wall of the pharynx is red, thickened and often has infected follicles. The pain on swallowing varied very much in intensity. Cases listed under this symptom did not have nasal symptoms, but all listed as relieved or improved had objective nasal signs. Hollender<sup>a</sup> in writing on purulent postnasal discharge says that "Allergy as a cause of postnasal discharge has been over-emphasized, but it must be considered in some cases;—purulence develops (in postnasal discharge) only if latent intranasal infection is present." It is felt that this is true.

#### Cough

Cough is the result of nasal sinus infection in many patients coming under my care. I have listed these in two groups, one in children, the other in adults although I cannot give good reason for this unless it could be that more of the instances in adults were unimproved by treatment. Twenty percent of the unimproved adults discontinued treatment against advice and really should not be included in the list. They refused maxillary sinus irrigation or other surgery. In the children, seventy-five percent had subjective nasal symptoms, and in the adults only twelve percent had nasal symptoms. A case report will illustrate what can be done for these cases without surgery:

Mrs. H. R. M., age 52, a beautician, was first seen February 2, 1957. Chief complaint unproductive cough, nervousness, minor, poor nasal breathing and profuse nasal discharge. Chest examination by a competent physician, and x-ray study showed the chest clear. Report on x-ray study of the nasal sinuses was "Maxillary sinuses opaque, ethmoids dark, frontals large and clear." Her lower turbinates were large dull red and did not shrink well. There was considerable purulent discharge on the floor of the nose and in the nasopharynx. On irrigation her maxillary sinuses were found to contain purulent material. She was advised to have a window put into the maxillary sinuses and much follow-up treatment. She was given displacement treatment with penicillin and streptomycin from February 7 to March 16, 1957. This eliminated her cough, her nervousness decreased and nasal breathing improved. In September she began to cough again and again she was given nasal treatment for two weeks. The cough was stopped but she was still very nervous, and nasal breathing unsatisfactory. Since then I have been able to follow her by indirect contacts and learn that she has no more cough, but she still needs the maxillary window.

Ercart and Associates as quoted by Slinger<sup>b</sup> have given an interesting classification of rhino-bronchitis in three groups: "Those caused by

reflex action originating in the nasopharynx, those that result from nasal obstruction, and those which result from descending infection. Prigal, also quoted by Slinger<sup>9</sup> offers the opinion that there is definite evidence of contagion and a carrier state in sinobronchitis with persistent reactivations in certain families. All who have studied these patients with medium care must have noticed the numerous reactivations in certain families. Every instance of persistent or recurrent cough should have the paranasal sinuses investigated very thoroughly even though the chest contains enough pathology to cause the cough. Sinus disease will sometimes be found to aggravate the cough considerably.

Sore throat without inflammatory signs in the pharynx is a somewhat puzzling symptom which is very often due to obscure nasal sinusitis. It is sometimes described as a part of myalgia of the head. The many patients who are relieved by nasal treatment, must be considered as neuralgia of the posterior palatine nerves, especially when it is accompanied by a burning sensation in the roof of the mouth.

Nervousness or neurosis as a chief or only complaint is often caused by nasal sinus infection. The record of the following patient illustrates this point.

Mr. P. F., age 47, a yacht-yard operator. Chief complaint nervousness and nausea, occasional vomiting. Late in January his physician sent him to the hospital for observation and treatment. During this stay in the hospital, he had numerous x-rays including a study of the nasal sinuses. He was told that there was evidence of trouble in the sinuses, but no remedial measures were suggested. On June 25, he came to see me about the sinusitis. Nervousness, nausea, and vomiting were undiminished and the sinus condition had had no attention. He had no subjective nasal symptoms, and the transillumination and x-ray showed the maxillary sinuses opaque, and the ethmoids dark. The mucosa was very thick and a dull red. The maxillary sinuses were irrigated and found to contain a semisolid muco-purulent material suggesting malignancy.

X-ray study later after filling with opaque fluid was reported to show no growth. After three irrigation treatments he felt too well to submit to a window operation, but came back in two weeks ready for the operation. Following this he continued to improve, but not until October was he entirely symptom free. During this time he was given displacement treatment and vaccine. He was discharged in November as cured. In July 1959, his wife came in to tell me he was still free from trouble.

*Vertigo* as a symptom of infectious diseases is usually mild in character but incessant. This is very true of the cases due to nasal sinusitis. It responds to treatment but is somewhat more discouraging than the headache or the sinobronchitis. Most cases are relieved by a few maxillary sinus irrigations and/or displacement and vaccine.

*Nausea and Gastric Irritation* (indigestion) seem to be caused by swallowing purulent post-nasal discharge. Over half of the cases coming under my care have been entirely relieved or improved by nasal treatment. It is my opinion that most of the unimproved cases had inadequate treatment.

*Pain in the Shoulders and Arms* usually accompanies neuralgias about the head, and at least twenty-five percent of the headaches in Table I had pain in the shoulders. Some cases, however present this as an only symptom. Hence the separate listing in Table I. In case of shoulder pain with no local pathology latent sinus infection should be suspected.

*Photophobia* as an only symptom is not rare in maxillary sinus infection. Of the eight patients treated during the time covered by Table I, all were entirely relieved by maxillary sinus irrigation.

#### Treatment

Treatment of nasal sinus infections is very different from that advised fifteen years ago. In this short time, most rhinologists have acquired great respect for the nasal and sinus tissues, and realize that this tissue has a physiologic function to perform. Operations which sacrifice nasal and sinus mucosa for the cure of

infection are taboo today, except in the most unusual cases. The frontonasal duct is untouched. If this sinus must be drained, it must be done externally; for once the duct is rasped it cannot properly function again.

In irrigation of the maxillary sinuses a large percentage of rhinologists approve the use of the natural ostium; but I am of the opinion that the cannula through the wall of the lower meatus is the method to be preferred for the following reasons:

1—Even in the most skillful hands there will, in a certain percentage of cases, be some damage to the membrane of the ostium.

2—In the seventy to eighty percent of patients who have only one ostium, the irrigating fluid must return through the narrow space around the cannula. If the sinus contains semisolid material, as it often does, this will either damage the ostium or remain in the sinus.

3—In a large percentage of patients, the normal ostium cannot be found without disturbing the position of the middle turbinate, and some cannot be located at all in the living. Some are very confusing in the dissecting room.

4—With a straight cannula through the lower meatus the fluid flows through in a more copious quantity, strikes the posterior wall and moves in the sinus in a cyclonic fashion and makes its exit through the natural ostium.

5—Needle puncture in the wall of the lower meatus cannot damage a functioning orifice, and is painless with topical anesthesia. For repeated irrigations the original point of penetration can usually be found, if not another does no harm. A small polyethylene tube can be passed through the needle and will remain in place for daily irrigations and medication.

With few exceptions the Caldwell-Luc, submucous resection, maxillary sinus window, and irrigations are the only intranasal operations advisable now in the light of our knowledge of nasal physiology. As already stated, if the frontal sinus requires surgical drainage it must be done externally and the frontonasal duct undisturbed; unless it is certain that the physio-

logic function of the duct has been destroyed by disease. Intranasal ethmoid surgery may still be advisable in very rare cases, but more and more cases are being found to respond to conservative treatment. It is my opinion that antibiotics should never be given alone in nasal sinus cases, whether acute, subacute or chronic. Culture, sensitivity tests, and some attempt at drainage should always be made. The displacement method and irrigations are the chief methods to encourage drainage. There is little except false impressions to be gained by giving antibiotics while a maxillary sinus contains even a small amount of discharge.

Almost from the beginning of my experience with the displacement treatment, I have used it somewhat differently from the method advised by Proetz. Tampons of a hygroscopic material (five percent Ichthyol in glycerin) are placed in each meatus nasi communis for ten minutes and the suction applied while the tampon is still in place or immediately after its removal. In recent years after removal of the Ichthyol tampons, I have placed tampons containing a mixture of penicillin and streptomycin before applying the suction. At present I am in doubt of the real value of any medicament in the second tampons; saline seems to give just as good results. I am now making records that will give some percentage information on this.

This method of giving the displacement treatment can be proven valuable by putting in tampons of opaque material and applying the suction. X-ray will show that some of the medication gets into the sinus cavities. I am convinced that the chief benefit derived from the treatment is the removal of discharge from the sinus ostia and cavity more than replacing with medication. The one exception to this will probably be found to be the antibiotics.

### Conclusions

*Seventy percent of patients having pain in the head can be relieved entirely or improved by treatment of a latent nasal sinus infection. Eighty percent of these are purely nasal sinus*

*headache, and twenty percent are a mixed type headache aggravated by obscure sinus infection. The unimproved patient listed in Tables One and Two include all other types of headache seen during the four-year period. Table Two shows the improvement in various types of headache brought about by treatment of a coexisting latent sinus infection.*

*The number of instances of neurosis, vertigo, nasopharyngitis, gastric trouble and cough cured or improved by nasal sinus treatment causes me to conclude that these are often symptoms of obscure nasal sinus infections. The fact that many have relapses after reactivations of nasal trouble in no way alters this conclusion.*

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### WHAT'S THE DOCTOR'S NAME

Identify this famous physician from clues in the brief biography. PAGE 73a

A CLINICAL EVALUATION OF  
TRICLOBISONIUM CHLORIDE IN

## Pustular : Dermatoses

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With a vast array of preparations at his disposal, the dermatologist has been accused of overtreating the patient. While practically all drugs do have their indications in dermatologic therapy, the antibacterials locally applied may be considered basic in the treatment of pustular dermatoses. In fact, once systematic disease has been ruled out and nasal carriers checked as a possible source of staphylococci and streptococci in chronic or recurrent infections, then cleansing measures for the removal of mechanical barriers and prevention of autoinoculation, together with topical antibacterial therapy may be all that is required for a successful clinical response.

Since a new antibacterial ointment, Triburon,<sup>®</sup> became available it has been evaluated in the treatment of various pyoderma,<sup>1, 2</sup> acne,<sup>3</sup> burns,<sup>4, 5</sup> proctologic disorders,<sup>6</sup> vaginitis,<sup>7, 8</sup> and in plastic surgery procedures.<sup>5</sup> From these reports it is evident that this bis-quaternary compound is characterized by an unusually low incidence of side reactions and that results obtained are comparable to those expected with topical antibiotics. Of especial importance is the fact that triclobisonium

chloride is effective against staphylococci and streptococci regardless of their resistance to antibiotics. Moreover, the development of resistance to this agent is minimal.<sup>9</sup> The present report is concerned with the use of triclobisonium chloride, 0.1 percent in a water-miscible base, in primary and secondary pyodermas.

### Materials and Methods

A total of one hundred patients (twenty-nine female and seventy-one male) ranging in age from six months to seventy-three years comprised the study. The duration of the disease prior to triclobisonium therapy ranged from a few days to ten years. Two broad groups of pyogenic infections treated were: 1) *primary pyodermas* (seventy-one patients) including impetigo, folliculitis, sycosis vulgaris, furunculosis, ecthyma, paronychia and dermatitis papillaris capillitii; and 2) *secondary pyodermas* (twenty-nine patients) comprising infected skin disease (i.e. ulcers, neurodermatitis, herpes zoster) and infections following burns, trauma and surgery. Patients were instructed to apply the ointment two to three times daily. Treatment was continued for a period of from five days to four months with an average duration of two and one-half weeks. The clinical response was graded as cured, improved, equivocal, or unimproved.

Triburon is the trade name for triclobisonium chloride, Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, New Jersey.

TABLE I CLINICAL RESPONSE TO TRIBURON

DIAGNOSIS	PATIENTS	CURED	IMPROVED	EQUIVOCAL	UNIMPROVED
<b>PRIMARY PYODERMAS</b>					
impetigo	20	18	11	1	0
folliculitis	24	12	10	1	1
sycosis vulgaris	9	1	2	2	4
furunculosis	13	11	2	0	0
ecthyma	2	1	1	0	0
paronychia	2	2	0	0	0
dermatitis papillaris					
capillitii	1	0	1	0	0
<b>TOTAL</b>	<b>71</b>	<b>45</b>	<b>17</b>	<b>4</b>	<b>5</b>
<b>SECONDARY PYODERMAS</b>					
infected skin disease	13	11	1	1	0
infections following					
surgery	5	5	0	0	0
infections following					
trauma	5	5	0	0	0
infections following					
burns	2	2	0	0	0
infected diaper rash	1	0	1	0	0
ulcerations	3	2	0	1	0
<b>TOTAL</b>	<b>29</b>	<b>25</b>	<b>2</b>	<b>2</b>	<b>0</b>
<b>TOTAL</b>	<b>100</b>	<b>70</b>	<b>19</b>	<b>6</b>	<b>5</b>

### Results

The results of treatment summarized in Table I indicate that eighty-nine of the one hundred patients (eighty-nine percent) were either cured or improved, the response being classified as equivocal in six and unimproved in five. In the primary pyoderma, sixty-three percent of the cases were cured and an overall favorable response (cured or improved) was noted in eighty-seven percent. Of the five patients in this group who showed no improvement, four were cases of sycosis vulgaris of four years' to six years' duration, all unresponsive to previous medication. In the secondary infections varying degrees of improvement were noted in ninety-three percent of the patients with cure effected in eighty-six percent; none were definitely unimproved. The average duration of therapy in these patients was nine days.

The effect on the primary disorder in this group of secondary pyoderma was generally not as striking as that on the infection, although in several of the acne cases, less pustules were observed while in some patients with ulcers, healing was noted.

All patients were carefully observed for evi-

dence of sensitization, irritation or systemic effects. With the exception of one patient who complained of skin irritation, no side effects were noted. The results of twenty-four and forty-eight hour patch tests were negative. In nearly all cases, patient acceptance was high, the ointment being easy to apply, non-staining and odorless.

From the present investigation, several advantages of Triburon emerge. These are: 1) rapidity of response, 2) lack of irritation in the known hypersensitive patients and 3) efficacy in long-standing refractory conditions.

### Case Reports

The following case reports are representative of the advantages attributable to the drug.

• **H. Z. and M. Z.** Two brothers aged 8 and 5 with impetigo of one week's and ten days' duration respectively were cured in seven days following application of trichloroacetonium chloride t.i.d. Mother and father also developed impetigo. The mother was treated with bacitracin ointment and the lesions took two weeks to heal. The father used an ointment containing polymyxin B and neomycin and the lesions cleared in sixteen days.

● *T. F.* Six-year-old female with neurodermatitis of one year's duration was treated with triclobisonium ointment b.i.d. after scratching had led to the development of the pyoderma. Complete clearing was observed in fourteen days. The patient, who had previous sensitization to numerous topical products, showed no signs of irritation following therapy with Triburon.

● *R. M.* A 47-year-old metal caster exposed to temperatures above 1000° was treated with triclobisonium for recalcitrant postular follicular eruption of the face of ten years' duration. Following two months of therapy with triclobisonium chloride therapy, the patient showed greater improvement than he had during the entire course of the disease. The patient is continuing to improve and is still being maintained on the medication with no evidence of irritation.

● *H. M.* A 54-year-old male with stasis ulcers of the legs and marked secondary infection of 4 months' duration was treated with triclobisonium chloride b.i.d. for eight days. Previous treatment had consisted of bacitracin, neomycin and achromycin ointments. At the end of the treatment period no evidence of purulent infection could be observed.

### Summary

*One hundred patients with primary and secondary pyodermas were treated with triclobisonium chloride ointment, a topical antibacterial preparation.*

*Triclobisonium produced an overall favorable response in eighty-nine percent of the patients, seventy percent being completely cured. The ointment was well tolerated in all but one patient who experienced local irritation. No evidence of sensitization or systemic effects was observed.*

*It is concluded that Triburon® is a highly effective and unusually safe topical antibacterial. In the majority of cases of pustular dermatoses it can spare the patient the use of systemic measures and the possible consequences of these.*

J. Z. A 32-year-old male was treated for severe impetigo contagiosum 3 weeks after onset of the disease. Eight days following application of Triburon® q.i.d. the condition cleared completely.



BEFORE—Numerous crusted lesions on face.



AFTER—Complete healing after 8 days of Triburon therapy.

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5 East Seventy-Sixth Street



## ULCERATIVE COLITIS AND CARCINOMA COLI

*"Among patients who have had ulcerative colitis for ten to twenty years, 1 in 3 develops carcinoma coli. An account is given of 26 patients with this complication, of whom only 4 survived.*

*Since the cancer is highly malignant and difficult to diagnose, colectomy is indicated as a prophylactic measure.*

*Relative freedom from the symptoms of ulcerative colitis does not imply that cancer will not develop. On the contrary, most of our patients were completely or almost symptom-free for several years before the appearance of cancer.*

*The possibility of assessing radiologically the indications for a "cancer-preventing" colectomy is discussed.*

*Because the cancer in most cases involves the upper part of the colon, colectomy and ileorectal anastomosis should be considered."*

HUGO ROSENQVIST, M.D., RUTGER LAGERCRANTZ, M.D.,  
HANS OHRLING, M. LIC., and NILS EDLING, M.D.  
*THE LANCET (1959) N. 7079, P. 908*

# *ECTOPIC PREGNANCY*

WASHINGTON C. WINN, M.D.

Richmond, Virginia

Ectopic pregnancy is seen infrequently in private practice, but is still the cause of maternal death often enough to warrant serious consideration. Several studies have been made of the ectopic pregnancies at the Medical College of Virginia Hospitals in recent years. Through these studies, the medical students, the interns, resident house staff, and the local practicing physicians have been made more aware of the problem, having pertinent information about diagnosis and treatment brought to their attention repeatedly.

These studies have apparently played an important role in substantially reducing the mortality rate from ectopic pregnancy in Richmond. Of course, the great importance of the development of blood banks, better anesthesia, and other factors, should not be minimized. Before the diagnosis can be made and treatment instituted, however, one has to think of the possibility of such a diagnosis. In this way, the studies have accomplished so much.

During a ten year period prior to 1940, one of every eleven maternal deaths in the City of Richmond was due to ectopic pregnancy. During the five years, 1950-1954 inclusive, only one in every twenty-five maternal deaths in Richmond was due to ectopic pregnancy.

At the Medical College of Virginia Hospitals, a similar reduction in mortality is reported. For the same period of five years,

1950-1954 inclusive, one in every thirty maternal deaths at the Medical College of Virginia Hospitals was due to ectopic pregnancy. See chart on following page.

These results have encouraged us to pass this information on to all who have an occasion to see and treat this accident of pregnancy. It has been interesting to note that these patients do not come to the hospital labeled for any particular service. Fortunately, most of them are suspected early and admitted to the service of Obstetrics and Gynecology. Some are admitted to General Surgery with admission diagnosis of appendicitis, gall bladder disease, etc. Others are admitted to the Medical Service. Only recently, a patient was admitted to the Medical Service because of severe anemia and ascites, suspected of having some type of malignancy. An alert resident suspected the diagnosis, aspirated blood from the peritoneal cavity, and transferred the patient with the diagnosis of ectopic pregnancy. It is most important, therefore, to suspect the diagnosis of ectopic pregnancy in any female in the child bearing age who has abdominal pain, particularly if it is pelvic pain and associated with any menstrual irregularity. Only by considering the possibility of this complication in all such cases, can the diagnosis be made promptly. It still is, and probably always will be, a difficult diagnosis to make in some cases. In others, the diagnosis is obvious, but treatment presents problems.

A history of previous pelvic inflammatory

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MATERNAL DEATHS DUE TO ECTOPIC PREGNANCY			
	PATIENTS	DEATHS	PERCENT*
MEDICAL COLLEGE	1930-39 inclusive (10 years)	150	12
OF VIRGINIA HOSPITALS	1940-44 inclusive ( 5 years)	115	2
	1945-52 inclusive ( 8 years)	222	1
	1953-56 inclusive ( 4 years)	226	0

\*uncorrected

disease is sometimes misleading. It must be remembered that this may be a predisposing factor in the development of ectopic pregnancy. History of a long period of sterility is obtained in many patients with ectopic pregnancy. Presence of peritubal adhesions due to endometriosis, ovarian cysts, uterine fibroids, previous pelvic surgery, and other factors may be a predisposing cause, obstructing the passage of the fertilized ovum.

In considering the diagnosis of ectopic pregnancy, one must remember that there are two entirely different clinical pictures presented by ruptured ectopic pregnancy. Most of the history, physical findings, and laboratory studies differ greatly, as does the management. The patient may experience an acute rupture with excessive blood loss into the peritoneal cavity, presenting a picture of shock from acute blood loss. The diagnosis is usually not difficult in this type of patient, but management becomes the real problem. The other type of ectopic pregnancy is where rupture occurs into the tubal lumen or into the broad ligament, forming a hematoma mass. In this type of patient, there is no evidence of excessive blood loss, usually no acute problems, and diagnosis is frequently difficult.

In one of our studies of one-hundred-fifteen consecutive cases of ectopic pregnancy, sixty-seven percent were admitted with an acute rupture of the pregnancy and thirty-two percent were admitted with a pelvic mass.

The patient who has a frank rupture of an ectopic pregnancy, with excessive hemorrhage into the peritoneal cavity, presents a classical textbook picture. There is usually a history of a missed menstrual period, or frequently, a delayed abnormal period which is usually

short and scant. This is soon followed by fairly severe lower abdominal cramps, frequently unilateral. Most of the patients in this group will have sharp pain, with or without fainting. A small number will complain of pain on urination or defecation. Nausea and vomiting may occur, but is not a prominent symptom.

Examination of the patient with acute rupture reveals the patient in varying degrees of shock, low blood pressure, fast pulse, pale, and fainty. The temperature is frequently normal or sub-normal. The abdomen is soft and flat, except for a characteristic fullness in the lower half of the abdomen. The patient is usually fairly tender over the entire lower abdomen, frequently more marked on one side. The characteristic thing about the pelvic examination is that they are so acutely tender that a satisfactory pelvic examination is impossible. Most often, the pelvic organs cannot be outlined because of extensive tenderness. Manipulation of the cervix causes severe pain.

Laboratory studies on such a patient reveal evidence of acute blood loss with low hemoglobin and elevated white count.

It is interesting, and mighty important, to note that if the internal bleeding should subside spontaneously, as does happen rarely with some ruptures or complete tubal abortions, the acute symptoms and signs regress after twenty-four hours or longer. After that time, the abdominal and pelvic tenderness subsides considerably and may be absent. The white count will return to normal and the blood pressure and pulse adjust to near normal. This is confusing and must be kept in mind if there is much delay in the patient's seeking medical care after acute symptoms first appear.

Treatment of such a patient, once the diagnosis is made, is immediate transfusion and operation. It is very important not to delay the operation, once intravenous fluids or transfusion are started. Nature has usually checked the bleeding temporarily by lowering the blood pressure! When the blood pressure begins to come up again, the intra-abdominal bleeding is increased. Thus, blood will escape intra-abdominally faster than it can be replaced. It is preferable, as a general rule, even in the presence of severe shock, to delay starting blood until preparations for operation are completed—but, such preparations should be made as rapidly as possible.

At operation, the diseased tube, in ruptured tubal pregnancy, should be completely removed. Every effort should be made to preserve the ovary on the involved side. Prompt and liberal replacement of blood loss increases the patients' chance for uneventful recovery.

The other clinical picture frequently presented by ruptured ectopic pregnancy is not as spectacular, but more difficult to diagnose.

The tubal pregnancy may at times rupture into the lumen of the fallopian tube, or into the folds of the broad ligament, forming a hematoma. There is not an excessive amount of blood lost because pressure within the hematomal sac controls it. Eventually, there is partial rupture of the hematoma with some spill of blood into the peritoneal cavity, causing peritoneal irritation.

The menstrual history in this type of patient is frequently similar to the first type described. The pain is likely to be more of a subacute nature, intermittent lower abdominal cramps and a dull ache through the pelvis. Usually, there is no history of sharp pain or fainting. The patient presents herself to the doctor because of menstrual irregularity and pelvic pain, which is not of a severe nature.

Examination of this type of patient reveals no evidence of shock or blood loss. The laboratory studies are within normal limits, the temperature normal or only slightly elevated. The abdomen is normal except for only moder-

ate tenderness in one lower quadrant or none at all. Pelvic examination reveals the uterus to be normal in size or only slightly enlarged. The cervix is closed. There is a well defined mass or an undue amount of thickening in one adnexa, usually unilateral, which is fairly tender, but not acutely so as in acute rupture. Tenderness upon manipulation of the cervix is not a constant finding.

It is difficult, and frequently impossible, to differentiate ruptured ectopic pregnancy with hematocele from endometriosis, hemorrhagic ovarian cyst, or adnexal inflammatory disease. If the differentiation cannot be made with reasonable certainty, usually there is no emergency and observation for twenty-four to forty-eight hours is frequently advisable. In such cases, the temeprature will rarely go above 102°, usually below 101°. If the pelvic pain and tenderness persist, in the absence of more fever, the diagnosis of inflammatory disease is unlikely and operation can usually be done with safety. If a pelvic mass is present and inflammatory disease unlikely, the treatment should be exploratory laparotomy. If much pelvic inflammation is present, the pelvic examinations will frequently flare it up. While observing the patient to make a differential diagnosis, antibiotics are withheld for fear of confusing the picture.

Now it may be helpful to elaborate on some of the symptoms and signs:

- *Vaginal Bleeding:* Seventy-five percent of our patients had some vaginal bleeding, twenty-five percent had none. It is important to note that none of the patients had excessive bleeding. The only patient, in a series of two hundred and sixty-five cases, who passed large clots, also had uterine fibroids present. This is a most helpful point in differentiating ectopic pregnancy from early abortion.

- *Menstrual History:* Careful questioning will reveal that most of the patients with ectopic pregnancy will have some variation from normal in menses. Frequently, a delayed and scant menstrual period is reported as normal menses until the patient is questioned

specifically about this. Amenorrhea was noted in only one-half of our patients until they were closely questioned again.

- **Temperature:** Ninety-six percent of our patients had a temperature below 101°.
- **Pain:** Pain is the most common symptom of ectopic gestation. Pelvic pain, either cramp-like or dull aching, was encountered in eighty percent of our patients.

Eleven percent had shoulder pains.

The textbook picture of ruptured ectopic pregnancy, with sudden severe lower abdominal pain, followed quickly by syncope and shocks, was observed in less than twenty percent of the patients in our series.

- **Pelvic Examination:** Should be done with extreme gentleness and care. In a few cases of acute rupture, the patient's condition was

so poor and the diagnosis so obvious (from history, abdominal examination, laboratory studies, and shock) that pelvic examination was not done.

The extreme tenderness in the pelvis, in the case of acute rupture, is characteristic and very helpful in diagnosis. The tenderness is much more severe than that seen with inflammation. The same is true of pain upon manipulation of the cervix.

- **Treatment:** It is worthwhile to emphasize again that any form of stimulation or intravenous injection, to raise the blood pressure before preparations for operation are completed, can be dangerous. Operation must be started in the presence of shock, if necessary, the bleeding points ligated and blood loss replaced as rapidly as possible.

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### MEDICAL TEASERS

A challenging crossword  
puzzle for the physician.

SEE PAGE 51a

# Multiple Therapy in Osteoarthritis

*The Use of ACTH-Phosphorylated Hesperidin as an Adjunct*

ESTHER TUTTLE, M.D., New York, New York

**I**t is a mistake to assume that the presenting joint symptoms in osteoarthritis are the only symptoms originating from the disease. Such symptoms, although real, may be embarrassing decoys to complicate a good diagnosis and a sound therapeutic program.

Osteoarthritis, according to Tuttle,<sup>1</sup> is a chronic disease caused by a disturbance in the metabolic system with specific abnormal biochemical findings. It is the joint manifestation of a constitutional disease and is a part of a general arteriosclerosis involving the cartilage and bone. It cannot be caused by, but is often exacerbated by, emotional or organic stresses, which tend to accelerate the disease process.

The aging process has a definite influence on the incidence of osteoarthritis by impairing tissue homeostasis through a deleterious effect on the cardiovascular system and individual joint structure. There are times when the alterations in joint functions are so pronounced that they attract first consideration, and the attention of the physicians, as well as the patient, is concentrated on the joint. Thus, the joint distracts attention from vital and important changes in the body which might yield vital clues.<sup>2</sup>

## Diagnostic Features of Osteoarthritis

Hypertrophic changes of varying degrees are found in many joints of the osteoarthritic patients, although only a few may be active enough to produce symptoms. The joints most frequently affected are those which bear the brunt of weight or work. Obviously, these joints are the spine, knees, hips and those of the extremities. Pain apparently is not commensurate with the degree of the joint involvement visible to the physician or revealed by x-ray. The most generally experienced symptom is stiffness.

The occurrence of stiffness is earlier and more common in women and eventually affects many fingers. Because circulatory deficiency is also involved in its early stages, stiffness in the fingers felt on awakening is soon relieved with activity. With an advancement of the process the deficiency in blood supplies to the joints is greater, the cardinal symptoms of inflammation are manifest, tissue hypertrophy develops and progresses, the joints involved become enlarged. To this progression of pathological events is given the name Heberden nodes when the terminal phalangeal joints are involved.

According to Stecher<sup>3</sup> these nodes are traumatic in origin and occur more commonly in the male, while those found in the female are prone to be of idiopathic origin.

From my own thirty years of investigations and observations, trauma plays no part in the etiology of osteoarthritis, but it must be recognized as having an important influence on the severity and progression of the disease. *From my studies there was no significant evidence to relate osteoarthritis resulting from occupational trauma or hard life to the number of cases found in the leisure class.* This was particularly evident with regard to Heberden nodes, where the terminal phalangeal joints are neither weight bearing nor the usual sites for chronic irritation, although they were affected early and commonly in this disease. Furthermore, the fingers first involved are the third, fourth and fifth, which are less used in labor than the thumb and index finger. Heberden nodes are rarely, if ever found, in the first and second work fingers before the process is established in the other auxiliary fingers.

One of the distinguishing features of osteoarthritis is crepitus on motion, particularly the knee, which is a spectacular performer, and the shoulder, as manifested by shoulder rub which is almost universal in individuals over forty.

Hollander<sup>5</sup> concluded from observations that "a chronic low-grade inflammation or congestion of the synovium does exist in the symptomatic or active osteoarthritic joint as a result of frequent irritation of the synovium by the excessive heat of friction by use. The slower rate of cooling would also indicate a decrease of blood flow through the membrane. Since the osteoarthritic patient experiences his joint pain mainly during and after prolonged use, we may have a logical explanation for his pain at last. Congestion of the synovium resulting from the excessive heat of friction, with delayed dispersion of heat, could account for the stiffness."

From these observations, inflammation imposed upon joints in which circulation is pri-

marily impaired in the osteoarthritic process is more resistant to dispersion. By virtue of this circulation deficiency, inflammation in affected joints is more persistent.

Although patients suffering from osteoarthritis may give the impression of being robust and healthy, a carefully taken history and a diligently performed physical examination will generally reveal some entity which contributes to the production of the arthritis. Evaluation of the facts in relation to normal health is needed. The existence of several chronic disorders in the same patient is the rule rather than the exception, and each increases the vulnerability of the patient to the related disease.

### Some Contributing, Precipitating Factors in Osteoarthritis

1. TRAUMA: Acute traumatic arthritis results from exposure to occupational hazards, and may be followed much later by chronic joint disability.

The abuse of joints, by misuse or overuse, is the most significant reason why osteoarthritis causes distress. In this respect, postural errors are the most common source of discomfort.

Congenital joint defects impose added strain, as may joint instability, from ligamentous deficiency or from muscle weakness as for example, pronated feet or dislocated hip.

2. ENDOCRINE-NUTRITION RELATIONSHIP: Hormonal deficiencies and imbalances modify metabolism and nutrition to contribute to the development of degenerative disease. In old patients, the health reserve is narrowed, therefore, in addition to studying the disease process, the health reserve of the patient should be evaluated.<sup>4</sup>

According to Hollander,<sup>5</sup> endocrine and metabolic factors are in part responsible for degenerative joint changes as demonstrated by both clinical and laboratory studies. Animal studies have shown that pituitary hormones have a definite influence on maturation and regeneration of cartilage but whether this is a direct influence of growth hormone or is mediated through androgens or other adrenal

hormones has not yet been established.

Malfunction of the liver, involving disturbances in the lipid and lipoprotein metabolism may be an etiologic factor in the genesis of osteoarthritis. Stress is the common factor—it causes an increase in the secretion of hormones of the pituitary-adrenal system and alters the metabolism of carbohydrates and protein.

Tuttle<sup>6</sup> has suggested that a disturbance in the phosphorylation mechanism holds the key to factors at fault—as evidenced by increased pyruvic acid levels. Pyruvic acid, in excess, is a muscle fatigue producing substance, and is probably responsible for the general fatigue associated with the arthritic syndrome.

**Fatigue:** According to Warter<sup>2</sup> the importance of fatigue as a factor is real and is considered a preceding event influenced by the patient's occupation, the patient's ability to adjust himself to environmental hazards, and the physical and neurological status of the patient.

The importance of fatigue as a disturbing force can hardly be overemphasized. According to Propst,<sup>7</sup> "Man not only acts but feels and thinks with his muscles, blood vessels, joints, glands, viscera as well as with his nervous system." In the osteoarthritic, fatigue must be "dug out" because he either fails to recognize this entity or refuses to admit its effects.

Thus, factors other than trauma alone must be involved in the genesis of osteoarthritis. A realistic approach to this medical problem should prompt the discard of the "wear and tear" concept and give impetus to the acceptance of the fact that biochemical-metabolic dysfunctions are precursors of osteoarthritis. Irreversible damage is the price of procrastination and a lack of thoroughness in the management of the whole patient.

### Treatment

The treatment of osteoarthritis should include<sup>8</sup> "the balancing of physiological assets and liabilities resulting from the specific effects of the disease, the general response of the body

function, and the effects of the treatment procedure. Balancing the therapeutic program to the physiologic needs of the patient is dependent upon clinical empiricism."

A key role has been ascribed to the pituitary-adrenal axis in the internal economy of the body. It has been suggested that ACTH and cortisone bring about an acceleration of the rate of biochemical interchange and promote the mobilization of enzymes for cellular work.<sup>9</sup> On the other hand it is stated<sup>10</sup> that the "basic facts are that other substances, as hormones, do not initiate new reactions but rather facilitate or alter the rate of already existing biochemical processes."

It has been theorized<sup>10</sup> that a new dynamic biochemical equilibrium may be established when:

1. The quantity of ACTH or cortisone administered remain within the physiological capacity to maintain homeostasis.
2. Internal metabolic stores are adequate.
3. The intake of exogenous supplies is unrestricted.

Conversely, biochemical disequilibrium continues or becomes accentuated when:

1. The quantity of ACTH or cortisone exceeds physiological capacities of homeostatic regulation.
2. Internal metabolic stores are depleted.
3. Intake of exogenous supplies is restricted.

The consensus is that ACTH suppresses manifestations of the disease but does not reverse the fundamental disease process. Its effect on the joints in arthritis is to suppress inflammation, restore electric potential, decrease temperature and increase viscosity and hyaluronic acid.<sup>11</sup> The physician must be alerted to the fact that ACTH does not replace any of the established medical measures in the treatment of arthritis, however, it does constitute an exceptional therapeutic adjunct with fairly definite indications and has an important role in carrying patients over the active stages until successful readjustments are accomplished.

Shaw<sup>11</sup> stated that adrenocorticotrophic hormone may be inactivated by enzyme or cata-

bolized in body tissues. Cohen et al<sup>12</sup> have established that ACTH can be more effectively utilized in the rat if administered in a medium which delays absorption of the hormone. Phosphorylated hesperidin and heavy gelatin seemed to be the most effective single agents in producing this delayed absorption. Further observation showed that a combination of these materials resulted in an augmentation of effectiveness. They postulated the overall action of the gelatin-phosphorylated hesperidin combination may be the result of an increased depot effect of the gelatin due to the anti-proteolytic action as well as the anti-hyaluronidase effect of the phosphorylated hesperidin.

A study was designed to incorporate the ACTH-Phosphorylated Hesperidin\* preparation as a therapeutic adjunct in the management of osteoarthritis. In approaching this study we did not permit the enthusiasm of others to beguile us into the belief that steroids and hormones are the final answer to the treatment of arthritis. As Claude Bernard said: "The investigator should have a robust faith—and yet not believe." The question to be answered was; would this combination be effective in carrying the patients over the active stage of the disease so that successful readjustments could be realized. Thus, this measure was made a part of the overall medical management in a series of three hundred osteoarthritic patients.

To treat osteoarthritis successfully, a separate plan must be developed for each patient. Arthritis patients, even those with incurable conditions or irreversible deteriorations, can be made more comfortable through supportive measures. The functional and nutritional resources of organs must be brought to maximum efficiency.

**ACTH-Phosphorylated Hesperidin:** The acute exacerbations of osteoarthritis manifested by heat, congestion and pain are treated with the ACTH-Phosphorylated Hesperidin,

80 units per cc., by intramuscular injections, the dose and frequency of administration depending on the severity of the symptoms. This combination is also used for the purpose of stabilizing biophysiological functions of the body; that is, to hasten the re-establishment of tissue homeostasis.

This phase of the treatment may be better demonstrated by citing a few selected cases.

**Reassurance:** Facts are evaluated in relation to normal physiology and health. The discovered abnormalities are conveyed to the patient in relation to their effect on reserve capacities. Patients are then reassured and guided as befits the intellect. By offering explicit reasons for each therapeutic measure, better cooperation is obtained and apprehensions are modified or avoided.

**Rest:** The physical law of conservation of energy applies to the osteoarthritic patient. It is essential not only for the patient as a whole; it is also necessary for the affected joint. Rest for the involved joint means using it within the prescribed limits. Prolonged immobilization may result in a loss of nitrogen, potassium, phosphorous and sulfur. Changes may develop in the protein matrix in which a lack of calcium deposit becomes evident. To prevent such mineral loss, a high protein diet—supplemented with protein of high biologic value when indicated—must be supplied. Early massage of muscles, physiotherapy and ambulation are recommended.

**Correction of Joint Defects:** Congenital joint defects impose added strain, as does joint instability from ligamentous deficiency or from muscle weakness. Medical, physical or surgical corrections may be required to attain the best joint mechanism. Since correction of deformities requires orthopedic know how, consultation of an orthopedic surgeon should be solicited.

**Emotional Stress:** Emotional stress situations may provoke profound alterations in the body's metabolic demands. They cause a depletion in tissue nutrients—enzyme activity is disturbed and thus anemia and edema may appear and, with them, prolonged illness.

\*ACTH-Phosphorylated Hesperidin — Medical Research Department, The National Drug Company, Philadelphia 44, Pennsylvania.

The psychic control is best managed when the patient is in a state of relaxation. In addition to analgesics, and sedatives, the tranquilizing-muscle relaxant drugs have been found useful as adjuncts to the symptomatic treatment.

*Gastrointestinal Tract:* It is surprising how little attention is given the gastrointestinal tract in osteoarthritic patients. As in any other disease, the gastrointestinal tract must be brought to a state of normal function. Constipation, impaired digestion and absorption, gall bladder dysfunction, and diarrhea—if found—must be treated.

*Nutrition:* The osteoarthritic patient having nutritional deficiencies may come to his physician burdened by outmoded medical ideas, by a pessimistic attitude toward his illness, and by food habits and prejudices not conducive to optimal health. Emotion may curtail his appetite so that he becomes a victim of undernutrition, or he may compensate for his frustrations by overindulgence in food resulting in obesity.

To determine the patient's deficiencies a complete dietary and nutritional survey should be made, including a consideration of his psychologic, social, economic and physiologic needs.

*The Capillary System:* A normal capillary system is essential for the maintenance of good health and nutrition in the joints. Abnormal capillary fragility and permeability tend to interfere with normal tissue homeostasis. Cells deprived of a part of their oxygen quota for too long tend to deteriorate physiologically. It must be realized that tissues, once depleted, require more of the essential nutrient factors than is possible to secure in even optimal diets. Thus, correction of capillary defects is an important phase of treatment in any disease, not only osteoarthritis.

*Endocrine-Nutrition Relationship:* The hormones are used as an auxiliary to nutrition therapy. Disturbances in the endocrine system may place an osteoarthritic in negative calcium balance. Since calcium ions are essential in many biologic processes, such as blood coagulation, muscle contractions and neuromuscular equilibrium, in cases of imbalance this element

is removed from the bone. A high-protein, high vitamin diet will aid in correcting this situation. Calcium retention may be increased by the administration of adequate doses of estrogens and androgens.

Estrogens alter the lipid pattern, increasing the lipo-protein and changing the phospholipid/cholesterol ratio. There is no evidence that they inhibit the deposit of cholesterol in vessel walls.

*Clinical Experiences with Described Program:* We have used ACTH-Phosphorylated Hesperidin as an adjunct in our approach to the osteoarthritic in three hundred patients. There were ninety-nine males between ages of twenty-eight years and sixty-one years with an average of forty-nine years; there were two hundred and one females between ages of thirty-seven and seventy-four years with an average, for the group, of fifty-six years.

Six cases are presented to describe our procedure dealing with osteoarthritis.

**CASE ONE:** E.C., a white female, 74-years-of-age, needed assistance and the use of a cane to get into the office. She had severe pain in the knees. She had been brought in from a midwestern city where she had been treated and a cane ordered for her use.

On examination she was found to have an elevated blood pressure, high metabolic rate with inverted *phylospholipid/cholesterol* ratio and evidence of atherosclerosis. Her chief complaint was excruciating pain in her knees.

On her first visit she was given assurance that she could be helped. She was given U80 ACTH-PH intramuscularly, and placed on general supportive therapy. Two days later she was given U160 ACTH-PH and the injection repeated at daily intervals for three doses.

**Results:** The patient walked a distance of ten blocks without assistance or use of cane on the fifth day. Her blood pressure was lowered to within normal limits. She returned to her house in the middle west after one week. A letter from the patient three months later informed us she had no recurrences of her knee disability and that she continues with the general supportive therapy as outlined for her.

**CASE TWO:** I.D., a white female, 52-years-of-age, had osteoarthritis for years, treated conservatively. In March 1958, patient developed acute severe pain in neck and came to office in a hysterical state.

Examination did not reveal anything of unusual significance. The patient was given U160 ACTH-PH intramuscularly, and an analgesic (Mephogen). The following day, patient showed improvement—the U160 ACTH-PH—repeated, then given at weekly intervals for six doses.

**Results:** The patient was seen a month after the last injection. Pains in neck were considerably less severe than they have been for a long time. Patient continued on one injection U80 ACTH-PH per month and remains comfortable.

**CASE THREE:** M.DeR., a white female, 68-years-of-age, experienced pain over a period of thirty-five years—mostly in the knees, neck and left shoulder.

In May 1958, she came in with severe pain in the neck, left shoulder and breast. She was emotionally disturbed due to fear of cancer in her left breast. X-ray showed calcium deposits in the costal region.

This patient was given U160 ACTH-PH intramuscularly. No general supportive treatment was prescribed. Salicylates were avoided because of family history of three cases of primary anemia. She received a total of eight injections given at weekly intervals.

**Results:** No further treatment was given. She returned six months later for a check-up. No further injections were required. Only complaint was that she "felt a few twinges on a rain day."

**CASE FOUR:** E.F., a white female, 71-years-of-age, had chronic osteoarthritis of long duration. Occasional episodes of pain which interfered with her hobby—dancing.

Liver and arterial survey showed evidence of atherosclerosis, but remarkably good liver function for a person her age. ECG was within normal limits. She had a secondary anemia which had responded well to treatment.

In October 1957, the patient presented her-

self with complaints of severe pain in neck, left shoulder and back. She had no appreciable restriction of motion.

This patient was started on U160 ACTH-PH which was repeated at weekly intervals for two additional doses. She was not seen for six months after the last injection—she came in for a check-up—had no pains in her joints and no further injections were necessary. She continues with her general supportive measures to maintain her gain.

**CASE FIVE:** M.T., a 54-year-old-white female, complained of severe pain in left knee. Five years ago floating calcium had been removed. Fingers and neck were also involved.

Treatment consisted of U80 ACTH-PH at weekly intervals for four doses. Motions were free and without pain.

Six months later the patient complained of acute pain in the neck and severe occipital headache. ACTH-PH U160 intramuscularly—repeated one week later. Mephogen and supportive treatment prescribed.

**Results:** The patient was seen nine months later for severe exhaustion. The patient presented no joint symptoms at this time.

**CASE SIX:** R.D., a 28-year-old-white male, had severe osteoarthritis of cervical spine and hands. Weekly intramuscular injections of U80 ACTH-PH were given for two months. Meticortelone, 20 mgms. a day for two weeks and carried along on 15 mgms. for two more weeks, relieved the cervical spine symptoms, but had no therapeutic effect on the hands. The patient refused further treatment because of his failure to respond to the treatment designed for him.

**Results:** The results are classified as: excellent when symptoms have been relieved within three weeks and improvement continued for at least six months after discontinuing ACTH-PH treatment; good when symptoms have been modified and improvement continued for at least three months after discontinuing ACTH-PH treatment, and poor when response was not adequate to produce relief of symptoms.

Our overall results were excellent in fifty-

five percent, good in twenty-five percent and poor in twenty percent of the patients treated in this series of three hundred patients. It seems that the severe, acutely involved joints responded more rapidly and the improvement was maintained for a longer period of time than the chronic cases with symptoms not referable to particular joints.

In about twenty percent of the patients, there were transitory complaints of pain at the site of injection, however, at no time was it necessary to interrupt the ACTH-PH treatment because of this complaint. This has been corrected in more recent preparations and now local affects are eliminated.

### Summary

1. Factors other than trauma and "wear and tear" are offered as precipitating etiologic causes in osteoarthritis.
2. A rationale for the use of ACTH-PH as an adjunct in the overall management of the osteoarthritic patient is presented.

3. A therapeutic regimen is outlined.
4. Three hundred patients with osteoarthritis were treated using this therapeutic procedure.
5. Results were excellent in fifty-five percent; good in twenty-five percent and poor in twenty percent.

Patients remained symptom free for longer periods of time when ACTH-PH was used as an adjunct.

### Comment

Results in a previous series of patients in whom ACTH Gel and Acthar Gel were used as adjuncts were not as favorable as our present results. After withdrawal of ACTH Gel or Acthar Gel, relapses would occur within a week to two weeks. With ACTH-PH the patients in whom there was a favorable therapeutic response remained symptom free for six or more months. It is our surmise that the phosphorylated hesperidin contributed appreciable to these therapeutic effects.

### Conclusions

*Medical judgment developed through many years of clinical experiences permits a conclusion attesting the clinical effectiveness of ACTH Gel-Phosphorylated Hesperidin as a therapeutic adjunct in the management of osteoarthritis.*

*A definite impression that this combina-*

*tion yields a more extended effect than ACTH Gel has resulted from this study. ACTH-PH has the capacity to carry the patient over the active stages and permits the successful accomplishment of necessary re-establishment of homeostasis by way of accepted supportive measures.*

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1111 Park Avenue

# *Diabetes Insipidus with Tumor of Pituitary*

## CASE REPORT

**M.Y., Female, Negro, Age 34**

**Diabetes Insipidus with Tumor of Pituitary**

**Presentation: Dr. J. Buttafuoco**

**Discussion: Dr. A. C. Carter**

**D**R. PERRIN LONG (CHAIRMAN): We will go to our first case this morning, Miss or Mrs. M. Y., who has diabetes insipidus due to a pituitary tumor. The case record will be presented by Dr. Buttafuoco.

DR. BUTTAFUOCO: This 34-year-old, separated, negro female, was admitted for what appeared to be menigococcal meningitis on 6-15-57 which responded well to achromycin and streptomycin. Patient received Benemid® for the first two days in the hospital while she was receiving penicillin, but penicillin discontinued because it was thought better to give patient achromycin as an organism was never isolated.

Five years prior to this admission she had a left-sided weakness that was diagnosed as poliomyelitis at Presbyterian Hospital in New York and said she had been treated for one year with one injection a week. She recovered

from this. There are no sequelae. It is not known just what illness this was.

One year prior to admission she was noted by her family to be difficult to get along with, had headaches, amenorrhea, polyuria, polydipsia, and visual disturbances. When she recovered from her acute illness, a neurological examination was done. A electroencephalogram and visual field examination done by the neurologist indicated a tumor in the region of the hypophysis. Another field examination by the ophthalmologist was reported as showing tubular vision only.

On 8-22-57 the patient had a craniotomy in this hospital with removal of a portion of her frontal lobes and excision of a craniopharyngioma. The postoperative course was uneventful and the patient made a good recovery. During her hospital stay the patient was noted to be producing large amounts of urine of low specific gravity and drinking large amounts of fluid. For example on 7-17-57 the patient was given 3 grains of sodium Luminal® intramuscularly every four hours and not given any fluids by mouth. In a 24 hour period she produced 2025 cc. of urine, the highest specific gravity of which was 1.007. Her hematocrit rose from 40 to 43 in eight hours and the patient lost seven pounds. Two preoperative Hickey-Hare tests had been reported as normal. Except for amenorrhea no other endocrine insufficiency was noted.

From the Department of Medicine, Kings County Hospital Center, and the Downstate Medical Center, State University of New York, Brooklyn 3, N. Y.

X-rays of the patient's skull were all negative. Postoperative Hickey-Hare tests revealed changes diagnostic of diabetes insipidus. Intake and output, postoperatively, while the patient was receiving 20 units intramuscularly of pitressin (which produced headaches and severe abdominal cramps) was approximately 5000 cubic centimeters daily. When Pitressin was discontinued, she produced approximately 3000 cc. of urine daily and felt a lot better.

**DR. LONG:** Thank you, very much. Do we have any particular x-ray films on this particular patient?

**RADIOLOGIST:** No.

**DR. LONG:** Dr. Carter, will you continue the discussion, please.

**DR. CARTER:** There are several points of interest about this patient who has diabetes insipidus. She gave a history of having been treated at the Presbyterian Hospital for one year with weekly injections which raises the question of whether her polyuria and polydipsia may not have been due to syphilis. In a large series of patients with diabetes insipidus, syphilis was the etiological diagnosis in eleven percent. The second problem that confronted us was that this patient had a meningitis and had received some chemotherapy from her private physician. It was therefore not possible to make a bacteriological diagnosis at the time of admission. The diagnosis of meningoococcal meningitis was made later. This presented two problems: first, was her diabetes insipidus due to a basilar meningitis or an encephalitis and second, what effect did diabetes insipidus have on the renal excretion of penicillin? With this latter problem in mind, the patient was placed on aqueous Pitressin and Benemid during the acute phase of her illness.

Another point of considerable interest is the visual fields performed in the Department of Ophthalmology which were reported as being essentially normal. Later, the patient was found to have a bilateral temporal hemianopsia. Actually, the finding in an EEG which Dr. Vastola will discuss later established the diagnosis of a pituitary lesion. These findings

#### SLIDE I HICKEY-HARE TESTS

PATIENT: M.Y.		PREOPERATIVE	
Period		Urine flow ml./min.	Urine m.osm./l.
1	Control	6.6	70
2		7.5	70
3	Infusion	6.6	95
4	3% NaCl	3.3	207
5		2.6	375
6	Post-	3.7	345
7	Infusion	4.7	295
8	Pitressin	3.0	350
9	0.1 ml. I.V.	1.6	595

PATIENT: M.Y.		POSTOPERATIVE	
Period		Urine flow ml./min.	Urine m.osm./l.
1	Control	10.0	85
2	Infusion	5.7	88
3	3% NaCl	5.31	90
4		4.7	110
5	Post-	1.6	165
6	Infusion	2.8	188

should emphasize the importance of performing good visual fields as it is far simpler to do visual fields than to obtain EEG's.

After the patient had recovered from her acute illness and was convalescent, a thorough investigation of the functions of her adrenal and thyroid glands failed to reveal any deficiencies. Her diabetes insipidus was investigated by a Hickey-Hare test which is shown in Slide I. The basis of this test is to increase the osmolarity of the blood by infusing hypertonic saline. The increased osmolarity will stimulate the osmo-receptors which will in turn either discharge stored antidiuretic hormone from the pars nervosa or stimulate secretion from the secretory cells of the posterior pituitary. In a normal individual one obtains a fall in the rate of urine flow of at least seventy percent. As can be seen, in this patient there was about a fifty percent drop in the rate of urine flow. In patients with classical diabetes insipidus there is a continued diuresis and the rate of urine flow does not diminish during the test until Pitressin has been given intravenous-

ly. Of considerable interest was the rise in urine osmolarity to 375 milliosmols per liter which rose to nearly 600 milliosmols per liter following pitressin. In reviewing these findings and those from normal subjects we must conclude that pre-operatively, the patient had only a partial diabetes insipidus and that during the infusion of hypertonic saline she was able to secrete or release some antidiuretic hormone. As one can see in Slide I, postoperatively the patient had a typical diabetes insipidus response with no increase in urine osmolarity during the Hickey-Hare test.

There are two therapeutic problems with this patient: first, as we have heard, the patient had a craniopharyngioma which was evacuated. Should she receive postoperative irradiation? Many neurosurgeons and radiologists believe that postoperatively irradiation to the craniopharyngioma will reduce the recurrence rate of these lesions. However, our Department of Neurosurgery did not want to give this patient postoperative irradiation. The second problem is the management of this patient's diabetes insipidus. Last week she was started on dried posterior pituitary powder by nasal insufflation, receiving one insufflation in each nostril three times a day. This is a very convenient and inexpensive way to manage most patients with diabetes insipidus. Other possible ways of treating patients with diabetes insipidus are: one, aqueous Pitressin subcutaneously, two, Pitressin Tannate in Oil intramuscularly, and three, posterior pituitary powder lozenges. Aqueous Pitressin is usually given subcutaneously three times a day. Many patients do not like this therapy as they have to inject themselves frequently. Pitressin Tannate in Oil may be given at 24-72-hour intervals, intramuscularly. This has the disadvantage of being a rather insoluble preparation and one with irregular absorption. In general, patients require 1-5 units or 0.1 ml. per injection.

Recently, there has appeared in the literature a paper reporting that lozenges of posterior pituitary powder for buccal absorption are very useful in patients who cannot tolerate the powder by nasal insufflation.

DR. LONG: Thank you, Dr. Carter. Dr. Vastola, would you like to say something about this diagnostic problem?

DR. VASTOLA: I'm afraid that the people who don't know this patient haven't gotten a picture of what a difficult problem existed. When the patient was brought into the hospital the diagnosis was not made as easily as it was reported to you. It was a matter of some time before it was made. Dr. Carter, I think, is quite right. One does not diagnose mass lesions involving the hypothalamus with an electroencephalogram. One does or one can arrive at the diagnosis far more easily by doing visual fields. Now the visual fields done by the Department of Ophthalmology were in error. We must remember, however, that we all make such errors once in a while. I think the thing we must learn from this particular error is we should learn to do our own visual fields. I think it is fashionable to consider that accurate visual fields cannot be done by confrontation and that fields done at the bedside are rather primitive. That is not true. They have one great advantage over the visual fields which are done with a perimeter. The doctor who is doing them is sitting in front of the patient. He is able to watch the patient's eyes, he knows when the patient shifts from the bridge of the nose, where the eyes are focused, and, therefore, he has a much better idea of the degree of reliability of his results than does an ophthalmologist who does not have the advantage of following the patient's eye movements. Fields done by confrontation are perfectly reliable for demonstrating such defects as this patient has. Perhaps I ought to say again, that the presence of amenorrhea and of bi-temporal hemianopsia, and syphilis, statistically, the most likely explanation for this group of symptoms is a mass lesion at the base of the brain causing hypothalamus or pituitary involvement, or both. In this particular patient, the probability of such a mass was so great that the patient was explored by the neurosurgeon without doing an air study.

Secondly, the electroencephalogram is not diagnostic. However, the electroencephalogram

in practically all patients with pituitary lesions, whether they involve the hypothalamus or not, shows the kind of activity which this patient shows; namely, a generalized five to seven per second dysrhythmia. Remember that the lower limit of the normal range is eight per second. This is probably due, not to direct involvement of the hypothalamus, but to the endocrine disturbances which are so frequently associated with either a pituitary lesion or a hypothalamic lesion. The size of the tumor can not be correlated with the degree of abnormality shown in the electroencephalogram. However, the degree of hormonal imbalance does correlate quite well with the degree of electroencephalographic abnormality. For instance, several authors have reported such abnormalities as this patient shows in patients with postpartum necrosis. They have demonstrated it in lesions which never popped out of the Sella, lesions such as chromophobe adenomas entirely confined to the Sella. These abnormalities have been shown to regress very nicely with hormonal replacement therapy. The two target glands involved are the thyroid and the adrenal cortex.

I don't know what has been reported

on EEG changes after hypophysectomies but I'm sure that people are collecting that data, probably at the NIH and I'm sure that they would find the same thing.

As to therapy. I don't know anything about the role of radiation in the treatment of craniopharyngiomas.

Let us consider the craniopharyngioma itself. I think that most of you will find in textbooks that craniopharyngioma is a lesion which appears in younger people. This patient was not a young person. I have not seen very many of these tumors, but the majority have been in people over the age of thirty. The books are misleading in this respect. Another point in respect to craniopharyngiomas which is made in all textbooks, is the presence on x-ray of calcification at the base of the brain in the region of the hypothalamus, calcium which on histological examination shows up in the walls of the cyst. This patient didn't have calcification. If you see it, you can be very certain about the diagnosis. If you don't see it, you don't see it.

DR. LONG: Thank you, very much, Dr. Vastola. This has been an interesting discussion.



#### "OFF THE RECORD . . ."

*Share a light moment or two with readers who have contributed stories of humorous or unusual happenings in their practice. PAGES 25a AND 29a.*

# Clinical Pathological Conference

NORTH CAROLINA BAPTIST HOSPITAL

The patient was a 17-year-old white high school student who was admitted to the hospital on January 2, 1958. The family stated that she had been ill for 3 or 4 weeks, the onset of the illness having been ascribed to "influenza." Following this, she developed severe muscular pains in her back and shoulder along with profound general weakness and high fever. There was a history of mental confusion and delirium for the preceding week. She had been treated by the family physician for "fibrositis and pneumonia" without improvement. There was no history of cough, headache, stiff neck, joint pain or hematuria.

Physical examination revealed a pallid, acutely ill white female who was poorly oriented and screaming with pain in her back. The temperature was 104, pulse 124, and respirations 36. There was conjunctivitis present in the right eye. Examination of the heart revealed a sinus rhythm and a grade-one apical systolic murmur. There was decreased resonance in both lungs but no rales were heard. The tip of the spleen was palpable and tender. There was generalized muscular weakness especially over the trunk muscles. There were no other positive findings.

## Laboratory

Initial laboratory studies resulted in the following values: RBC 3.1; Hgb 9 gm; WBC 13, 100 with 82% neutrophils and 18% lymphocytes; Kahn negative; urine specific gravity

1.010, reaction acid, sugar and albumin negative, rare RBC and 30-40 WBC/hpf; fasting blood sugar 109 mgm%; blood urea nitrogen 17 mgm%; negative cold, febrile and heterophil agglutinins; spinal fluid clear and colorless, one lymphocyte was noted and the total protein was 46 mgm%; spinal fluid culture negative.

A chest x-ray showed a scattered infiltration in her left lung field involving the lower two-thirds and suggestive of an acute pneumonia. The heart appeared normal.

## Hospital Course

While in the hospital, the patient continued to run a spiking temperature with daily elevations of 103 and 104. The delirium, restlessness and muscular pains persisted despite antibiotics, intravenous fluids and general supportive care.

Additional laboratory studies were reported as follows: negative L. E. preparation; repeatedly negative blood cultures; chest x-ray ten days after admission was reported as normal; the electro-cardiogram was negative on several occasions; platelet count 237,000; TSP 6.8 gm with albumin 3.3 gm and globulin 3.5 gm; the anemia moderate leukocytosis and elevated sedimentation rate persisted until she died.

On the seventh hospital day, steroid therapy was added to the regimen. There was a prompt fall in temperature to normal limits and the patient began to improve rather dramatically.

Mental confusion cleared and she began to take some oral nourishment. There was also a gradual disappearance in her muscular pain.

The dramatic improvement to steroids narrowed the clinical impression to dermatomyositis. A biopsy of the gastrocnemius muscle, after two weeks of steroid therapy, was interpreted as "striated muscle with minimal changes suggestive of dermatomyositis."

Following this, the patient seemed to be gaining in strength until her steroids were reduced in dosage and salicylates were added. Within a day or two, she began having epistaxis and a slight amount of hemoptysis. Prothrombin time was found to be 68% and the salicylates were stopped immediately. There was also a return of her muscular pains when the steroids were reduced.

On February 8, she took a rather sharp turn for the worse and a pericardial friction rub was noted. Her temperature was again elevated to 101 and there was a tachycardia of 130. She expired on February 18 with extreme dyspnea and tachycardia.

#### Clinical Discussion

It is immediately apparent that, while this illness began during an influenza epidemic, the progression is one that must be regarded as more toxic and disseminated than we would find in influenza.

The basic findings, in addition to those already mentioned, are fever, presence of a heart murmur, hyporesonance of the lungs, splenomegaly and anemia. This group of symptoms suggests the possibility of a septicemia and subacute bacterial endocarditis. We are told, however, that repeated blood cultures were negative.

It should be pointed out that we have no report of any changes in the cardiac findings until the terminal event associated with pericarditis.

The question of a fungus infection might be raised inasmuch as there appears to be both a pulmonary and the possibility of a

central nervous system lesion. However, against this is the absence of cells in the spinal fluid with moderately elevated protein. We can find no further support for this diagnosis in the protocol and must admit that, geographically, actinomycosis and blastomycosis would be the most likely fungi for further consideration since both histoplasmosis and coccidioidomycosis occur somewhat to the west of this patient's origin.

#### Lupus

It appears that systemic lupus erythematosus was strongly considered. It is important to know that the negative L. E. preparations were done prior to steroid therapy. From a clinical point of view, very little is described that would specifically suggest lupus in that there were no skin lesions, joint involvement or urinary findings. A muscle biopsy is said to show changes suggestive of dermatomyositis. I do not believe that this type of comment can be accepted as a diagnostic statement since the findings in dermatomyositis are fairly characteristic and, in severe illnesses, minimal changes in the musculature are apt to be found.

A word of warning is perhaps in order in commenting on muscle biopsies. An attempt should always be made to biopsy from a site of involvement, and particular attention should be given to avoid sites that have been used for subcutaneous or intramuscular injections. It is certain that the facial butterfly is as characteristic of lupus as the alabaster facies are characteristic of dermatomyositis. It appears that there is very little to substantiate either of these diagnoses.

The question of whether or not the lung lesion represents part of the primary syndrome must be considered further. X-rays showed a diffuse infiltrating lesion, involving primarily the lower lobes, possibly more extensive in the left lower lobe. The presence of an acute illness, reaching a stage of tachypnea and peripheral collapse with no response to antibiotics, raises the question of interstitial pulmonary fibrosis of the Hamman-Rich type. We have

become progressively aware in the last few years that this syndrome is not one restricted to latter adult life, but can occur in acute fulminating patterns, and in young individuals. Although the third and fourth decades are the favored periods for its occurrence, cases during late childhood have been described. The rapid progress with dyspnea, minimal hemoptysis and finally heart failure are characteristic.

The response to steroid therapy might be considered as somewhat compatible with this diagnosis in that we now have reports of individuals with this disease being held in remission for periods up to three years. The prompt exacerbation of respiratory symptoms and the development of hemoptysis with pleuropericardial serositis are signs seen in acute relapse of collagen diseases.

#### CLINICAL DIAGNOSES

- Acute interstitial pulmonary fibrosis
- Intercurrent infection of unidentified type

#### Pathological Discussion

The body was that of a well developed, well-nourished, white female appearing about the stated age of 17 years. The right pleural cavity contained 750 cc of clear yellow, watery fluid, and the left contained approximately 600 cc of a similar material. The heart was 450 grams. The pericardium was adherent, and the pericardial cavity was completely obliterated by firm, gray-red adhesions except for the presence of two cavities. Both cavities were over the posterior left ventricle and were 5 cm and 7 cm in greatest dimension. The smaller cavity was lined by a roughened yellow-gray lining and filled with a thick, yellow-green liquid. The larger cavity had a similar lining and appeared to be filled with blood clot. It also communicated with the left ventricular chamber through a 2 cm diameter opening lined by a glistening gray membrane. The valve rings and ascending aorta had circumferences within normal limits. The right and left lungs were 730 gm and 590 gm respectively. Both lungs were non-crepitant, pink-gray and moderately firm.

The liver was 1760 grams. The capsule was glistening and red-purple. The sectioned surface was soft, friable and mottled red-brown. The malpighian corpuscles were prominent. The brain was 1310 grams. The external surface was unremarkable. The right thalamus contained a 1.5 x 1 cm cavity filled with a grumous, green-yellow material, and surrounded by a firm wall.

Cultures of the heart's blood yielded no growth. Cultures of the right lung yielded Alpha streptococci and Neisseria sicca. Cultures of the pericardial abscess yielded non-hemolytic staph.

#### Microscope

The defect in the left ventricular wall was lined by dense connective tissue beneath which was a layer of granulation tissue containing a moderate exudate of lymphocytes, plasma cells and granulocytes. The ventricular myocardium about the periphery of the defect contained an increment in dense fibrous connective tissue containing scattered lymphocytes. The pericardial cavities were lined by a layer of granulation tissue containing a dense exudate of granulocytes mixed with moderate numbers of lymphocytes and plasma cells. The cavities contained a purulent exudate of granulocytes.

Sections of the lungs revealed marked atelectasis with associated prominent hyperemia and edema. All sections contained an increment in loose connective tissue and scattered lymphocytes, plasma cells and granulocytes. The hepatic sinusoids were dilated and congested with blood. Some cells were vacuolated.

The splenic sinusoids were filled with blood, and there were many granulocytes present. There was considerable edema of many lymph nodes.

#### Pathological Diagnosis

- Pericarditis, chronic suppurative with two large abscesses, one communicating through the left ventricular wall with the ventricular chamber.
- Thalamic abscess, right.

- Pulmonary edema and fibrosis, disseminated, marked.
- Pleural effusions, bilateral.

### General Discussion

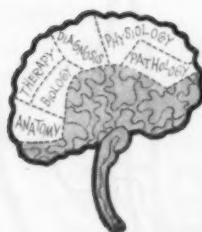
A review of the electrocardiograms introduces new information of importance. The feature of greatest interest in the electrocardiogram which was originally interpreted by two cardiologists as normal is that in lead 3 there is a fairly large negative deflection which measured 0.038 seconds in length. There were no negative initial deflections in lead 2, AVF, V5 or V6 and the T waves in lead 2 and AVF were upright. The T wave in lead 3 was diphasic. Despite the lack of supportive evidence in other leads of the electrocardiogram, the fact that this patient did not have left axis deviation and did not have a S1S2-S3 syndrome suggests that this large negative deflection should have been interpreted as a Q wave representing an area of dead myocardial tissue.

It is to be emphasized that the important lessons to be learned from this case are: first, the necessity for careful cultural background

prior to the institution of antibiotic therapy. This has become an increasing problem, especially in institutions with a prevalence of resistant staphylococci.

The literature repeatedly emphasizes outbreaks of extensive staphylococcal infections, and, in each of these outbreaks, cases are included in which the primary bacterial infection was controlled only to have the resistant organism become invasive. Hence, the second point for emphasis is to be alert to secondary bacterial invasion. The present case undoubtedly represents one of a primary viral pneumonitis secondarily complicated by a pyogenic organism which gradually became resistant to chemotherapy.

The third point, which is always difficult to define, is the role of steroid therapy. The importance of steroids in support of acutely ill patients suffering from infection has been well demonstrated. Likewise, the problem of breaking the patient's barrier to resistance to infection by inhibiting the inflammatory response also becomes a major problem. The indications for the use of steroids should be carefully considered in every case.



### MEDIQUIZ . . .

Working alone or with your colleagues you'll find this is no snap.

PAGE 93a.

# External Hemorrhoids

**H**emorrhoids are dilated veins of the hemorrhoidal plexuses which project into the lumen of the anal canal and may protrude from the anus. They are termed "internal" when they are above the pectinate line (anorectal line), "external" when they are distal to the pectinate line, and "combined" when they extend throughout the length of the anal canal.

There are normally two venous plexuses, one in the anal canal and one at the anal orifice. They lie in the subcutaneous and submucosal tissue, and are therefore loosely supported. The upper plexus, situated above the pectinate line and covered by mucous membrane, consists of branches of the superior and middle hemorrhoidal veins (Figure 1). The lower plexus, distal to the pectinate line, and covered with modified skin, is composed of branches of the inferior hemorrhoidal veins.

The veins of the hemorrhoidal plexuses become distended from local obstruction and from increased intra-abdominal pressure. If the distention is oft-repeated or long-standing, the vein walls and overlying skin or mucosa remain stretched and "hemorrhoids" result.

Distention may be caused by straining at stool or with physical exertion (e.g., lifting), pregnancy and delivery (with resultant venous stasis), carcinomatous infiltration of the pelvic rectum (with venous obstruction), or relaxation of the external anal sphincter (resulting in sagging and possibly eversion of the lining of the anal canal). Portal hypertension (as

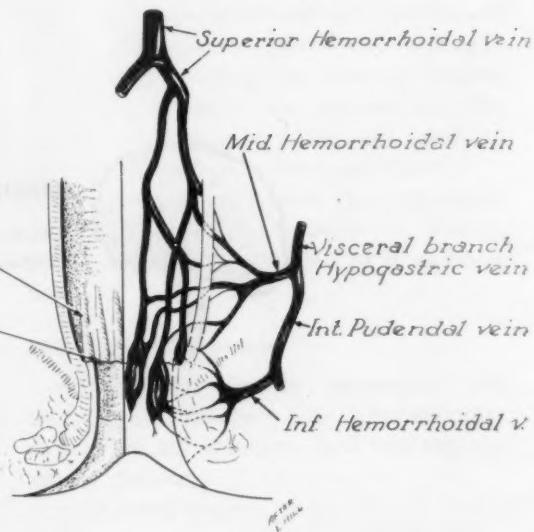
in cirrhosis of the liver) is an occasional cause of hemorrhoids.

## External Hemorrhoids

Dilatation of the external hemorrhoidal plexus is accompanied by hypertrophy of the overlying skin at the anal orifice. With straining, the distended veins project from the anus as rounded soft purple masses. When the straining is stopped, the distention of the veins disappears, but the hypertrophied skin may project as tags.

Symptoms of external hemorrhoids are: a) a mass projecting from the anus with straining at stool and with exertion, b) occasional itch-

FIGURE 1 The hemorrhoidal veins.



ing due to the skin hypertrophy, c) occasional bleeding following trauma, and d) pain, usually due to thrombosis.

Thrombosis of external hemorrhoids, due to local trauma and stasis, with or without infection, is recognized as a firm, painful, purple mass or masses projecting from the anus. (Figure 2). The degree of pain is dependent upon the severity of the accompanying inflammation. Pain is severe with sitting and with bowel movements. Usually one or two small venous radicals become thrombosed. If no treatment is given, organization eventually takes place, and the hemorrhoidal mass remains as a tab of skin overlying an area of fibrosis.

A larger thrombosed vein may progress to an ulceration of the skin, with resultant oozing of dark blood (Figure 3). The clot may be extruded through the ulcer, in which case the wound heals by granulation. Occasionally the inflammatory symptoms are much more marked; the overlying tissue becomes very edematous, and pain is severe.

Treatment of external hemorrhoids is often not necessary unless symptoms (itching, etc.) are severe, or complications develop. Excision is then the treatment of choice, and is usually best carried out in the hospital. However, small external hemorrhoids may be excised under local anesthetics in the office by means of radial elliptical incisions. The base of each hemorrhoid is ligated with fine catgut, but the wounds are left open, and heal within a few days. Sitz baths three times a day and mineral oil nightly are of help during the healing period.

Thrombosed external hemorrhoids require treatment because of the pain which the patient experiences. Since the pain is largely due to tension in the area of thrombosis, it can be relieved by incision and evacuation of the clot. The patient is placed in the prone jack-knife position, or on his side in Sims' position, and after the perianal area is shaved, cleansed, and draped, the skin and subcutaneous tissue over and around each thrombosed vein are infiltrated with 1% procaine (Figure 4). A radial elliptical incision is made through the skin

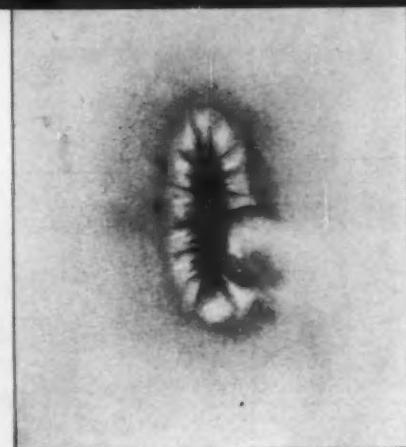


FIGURE 2 Thrombosed external hemorrhoid.

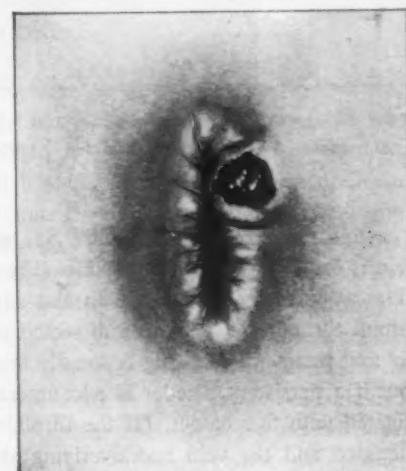


FIGURE 3 Ulcerated thrombosed external hemorrhoid.

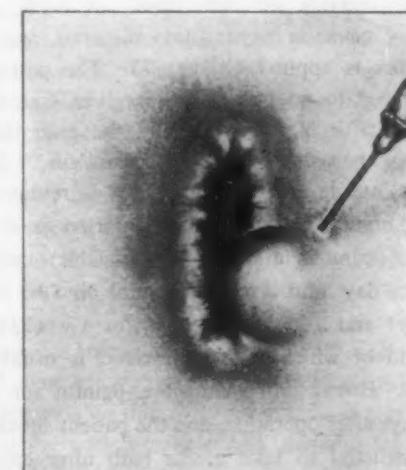


FIGURE 4 Infiltration of thrombosed external hemorrhoid with procaine.

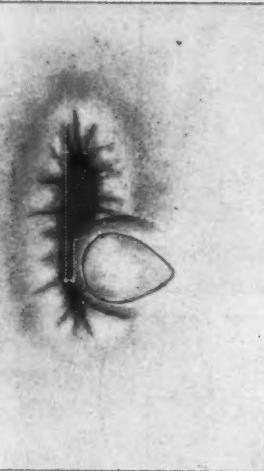


FIGURE 5 Radial elliptical incision.

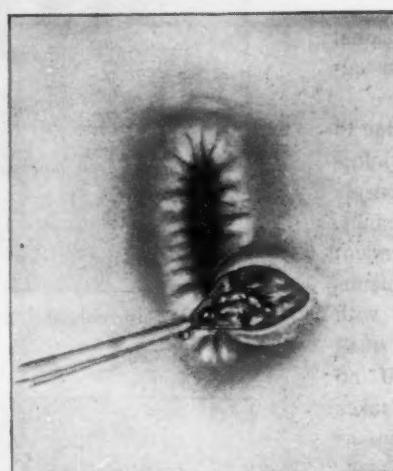


FIGURE 6 Removal of thrombosed external hemorrhoid.

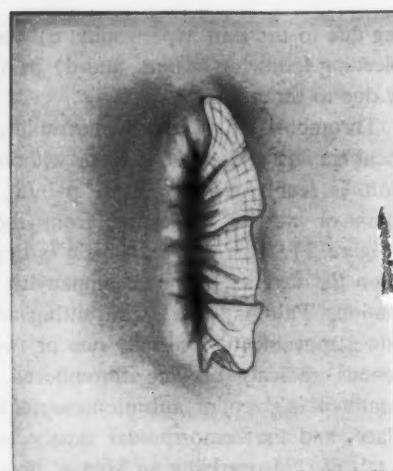


FIGURE 7 Vaseline gauze wick in anus.

over each thrombosed vein (Figure 5), and the vein is excised along with the skin (Figure 6). The wound edges are lifted up and adjacent small thrombosed veins are dissected out bluntly and removed. Bleeding is usually minimal but if a persistent bleeder is encountered, it is ligated with fine catgut. (If the thrombus is evacuated and the vein and overlying skin are not removed, the wound edges fall together and bleed, and a new clot may form under them.)

The wounds are left open. A wick of vaseline gauze is inserted into the anus, and a T-binder is applied (Figure 7). The patient is allowed to go home, and is given codeine to take with him for relief of the pain that recurs, when the anesthesia "wears off." In twenty-four hours the gauze pack is removed in the office and the patient is started on sitz baths (sitting in a tub of warm water) three times a day, and is given mineral oil (30 cc. nightly) and a low residue diet for a week, at the end of which time the wound is usually healed. Bowel movements are painful for a few days after operation, and the patient should be instructed to take a sitz bath after each stool, for comfort and cleansing.

If there is marked edema, the patient should

be treated with sitz baths and sedation until it subsides. Then excision can be carried out as outlined above. If the edema does not subside within two or three days, the patient should be hospitalized and the entire mass excised under local or spinal anesthesia.

Internal hemorrhoids occasionally thrombose and prolapse through the anal orifice. As a rule they are softer than the firm thrombosed external hemorrhoids that usually accompany them. They are best not incised or excised while thrombosed, and should be pushed back up into the anal canal. The acute symptoms subside after a few days of rest, liquid diet, sitz baths, and mineral oil, and the patient can then be prepared for elective hemorrhoidectomy.

Since hemorrhoids may be only the signal of a more serious lesion, thorough investigation should be carried out as soon as the wounds of treatment of the acute process have healed. A careful history and physical are essential, as is a sigmoidoscopy, and in a patient with symptoms or physical findings that are not explained by a minor local lesion, a barium enema is advisable. Failure to carry out this "work-up" may result in failure to detect a carcinoma until too late for successful treatment.

## EDITORIALS

PERRIN H. LONG, M.D.



### THOUGHTS ON TEACHING

For sometime I have been struck with the difficulties which one encounters in conducting combined student and house-staff teaching rounds, especially when one's ward clerks are third year medical students. If you "beam" your educational program and thoughts to the students, your teaching has to be relatively simple in content, and deal with history taking, physical examination, simple laboratory tests, and the correlation of these so as to arrive at a correct evaluation of the patient's illness. Unfortunately, in most instances, this primary type of instruction does not interest the house staff (but oh my, how often it happens that this, is what they need most). Its members would much rather hear about the "*modalities*" of therapy, or initiate discussions on the "*electrolyte mosaic*," the "*liver profile*," the "*febrile agglutinins*," or on the daily problems of "*anti-coagulating*" patients. Of course these wonderful words ring in the ears of the students, but that is just about all. The instructor must always remember not to be a "word-ringer." Only too frequently the instructors seem to be more fluent in the jargon than the students. *And we pride ourselves on medicine being a learned profession!*

Now, the exceptional teacher (and they are born, not made) can frequently bridge the instructional gap between the ward clerk and the house staff, but because exceptional teachers are rare, one must consider the wisdom and practicality of separate teaching rounds. Obviously, the first consideration of such a program has to do with whether one has a staff which is numerous enough, and adequate from the point of view of instruction, to carry out the split educational program.

Let's assume that one has the staff. What philosophies of teaching should prevail? One must give careful consideration to Sir George Pickering's<sup>1</sup> thoughts on this issue because he expresses truths, applicable both at the undergraduate and graduate levels.

<sup>1</sup> Pickering, Sir George W., Opener's Remarks, Section on Advanced Training for General and Speciality Training, Second World Conference on Medical Education, September 1, 1959, Chicago, Ill.

He quotes Karl Pearson as saying, "The true aims of teaching must be to impart an appreciation of the method rather than a knowledge of the facts, for method is retained when facts have been forgotten." Sir George has personally interpreted the phase "appreciation of the method" to the Editor, to mean in medicine, the art of trying to obtain the truths, while still trying for new truths which may make the situation clear, and then testing the explanation arrived at to see if it is right.

As most explanations (concepts) are based on inadequate data, the exploration for new truths must be a continuing process, and concepts must undergo progressive modifications as new information is brought to light. This means that early in his career, the student must become completely familiar with comprehensive history taking and its importance, and with the background physics in the technique of the physical examination. The importance for the need of accurate, and at times frequent, clinical laboratory tests which the students or house staff do themselves, and the background of when and why these tests are helpful must be explored with the student and the young physician. In the consideration of concepts of disease, the natural history of the disease under discussion must be borne in mind, because the student or young physician must be guided in his development of knowledge by an understanding of the origin, course and termination of disease.

A dynamic approach must be maintained constantly in teaching because our concepts of origin, course, and management of disease are constantly changing.

In developing the background for concepts of disease a knowledge of what has and is going on is of real importance. Hence, as instructors, our duty in guiding our students and young physicians in their reading of medical literature and of discussing with them what they read is most important. *The education of a physician ceases when he stops reading*, because then he loses his habit of thinking and does what he does, because that is the way he has done it before. Reading is the major fac-

tor in the continuation of one's medical education.

Finally it is to be hoped that all will emphasize and re-emphasize these words of Sir George Pickering. "*The student must be trained in precision of thought, particularly as expressed by precision of language. The function of language is to convey meaning, and words may convey to the recipient what we intend them to mean.*" Medicine is still classed as a "Learned Profession." However, we can't expect this designation to survive if we continue to develop and use the jargon which is debasing the scientific language of our profession to the level of jibberish. Is it not high time for the American Specialty Boards to take some thought of the sad state of medical terminology and fail candidates on the grounds that they are ignorant of their mother tongue who "anti-coagulate" patients, and who order "liver profiles" or "febrile agglutinins." Some of the Boards are now requiring an examination in English of candidates who are American citizens, but who have graduated from foreign medical schools. Why not have every oral examination gauged to test the candidates knowledge of the American Language as well as his knowledge of the Specialty?

#### Guest Editorial—THE FORAND BILL

Announcement by HEW Secretary Flemming the Administration has failed to come up with a suitable alternative to the Forand Bill is significant. Seven months ago (July 1959), Flemming, in the House Committee Hearings asked for time to explore other means of meeting the old-age sickness and hospitalization problem. Admitting his Department has failed to find a suitable alternative, he concludes the Administration's past opposition may have to be reviewed.

Flemming's announcement is unlikely to have been issued without Administration preview. The Forand Bill represents one of the more controversial and political issues of the 1960 Presidential race. Importance to be

attached to the votes of America's fourteen million oldsters is not underestimated by Republicans or Democrats.

Forand has indicated he is not necessarily wedded to his Bill; that he welcomes any practical modification or alternative. He does insist, however, something constructive be done about the old-age sickness problem and done soon.

In view of possible reversal of the Administration's stand, this reasonably receptive attitude of the Bill's sponsor should not be ignored. There is certainly less danger in exploring constructive modifications of the Bill than in reinforcing an attitude of uncompromising opposition. Medicine, by the latter course may be committing itself to a dangerously inflexible position running counter to public opinion.

Public opinion is getting tired of uncompromising stands on issues of national welfare. The "dog-house" built by the steel strike could unwittingly find private medicine its first occupant.

The nub of catastrophic medical expense is soaring hospital costs. Oldsters, generally, just

don't have this kind of money. They do have personal dignity, the vote, and a lot of public concern for their welfare. Since the medical profession can't afford to subsidize hospital costs, maybe the time has come to quit running interference for the hospital-insurance company team. This seems particularly apropos since the hospitals can't decide if they like their teammates and which goal they want to defend.

Instead, it might be just the time to focus a little attention on defining and protecting our own interests. A "Leave us out, thank you" toward surgical fees and other professional inclusions of the Bill and a "Friend of the Court" attitude toward helping modify it to give oldsters and the taxpayers their money's worth—might be just the right prescription. It might, just incidentally, be the golden opportunity to find the answer to rising medical costs and the survival of private practice.

T. K. CALLISTER, M.D.

*Lectures In Medical Economics*

School of Public Health, University of California,  
Los Angeles 24, California.



#### STOP AT CORONER'S CORNER . . .

Read the stories Doctors write of their unusual experience as coroners and medical examiners.

PAGE 45a

**Remember  
When...**



# 1909

Most American physicians who wanted to obtain the best in Post-graduate training journeyed to Germany or Austria to take their work in world-famed clinics.

Many Americans who were interested in diseases of children went to the Kaiser-und-Kaiserin Friedrich Kinder Krankenhaus in Berlin for Postgraduate study.

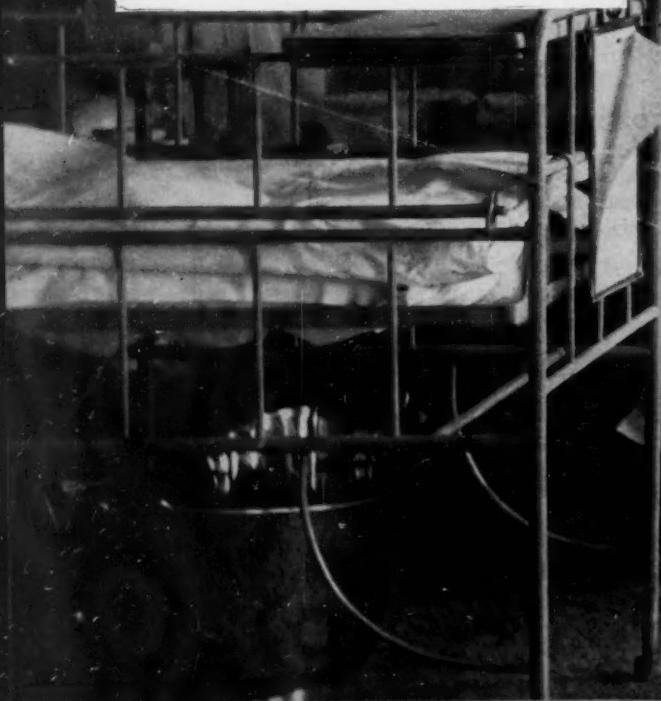
Nurses and nurses' aides, like everyone else, wore skirts to the ground.

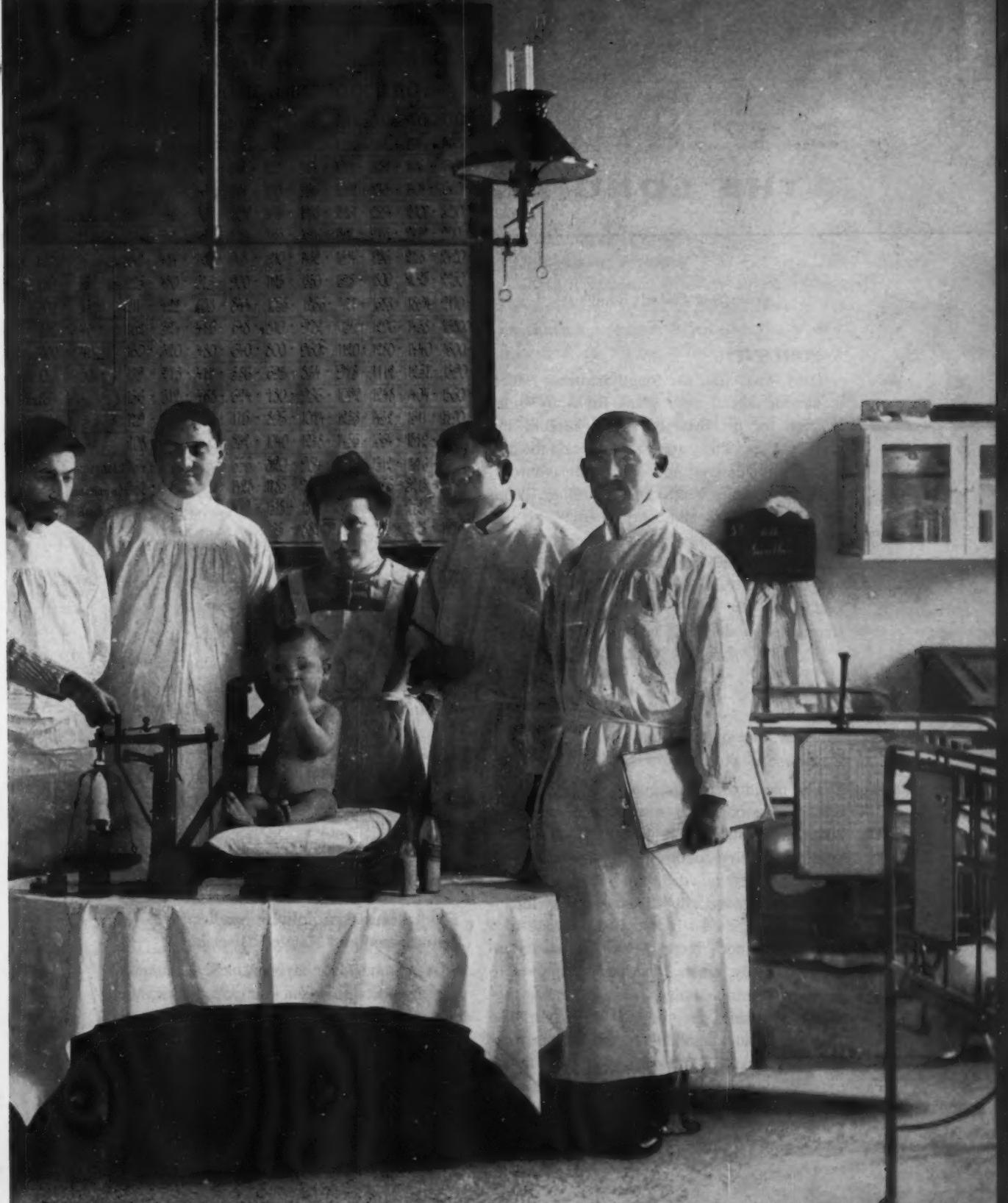
Baby scales were balanced to obtain the weight of the child.

The Chief of this Kinder Krankenhaus, Professor Adolph Baginski, was proud of his innovation of an individual bathtub under each bed for each child, and a cabinet on the wall above each bed to hold the patient's thermometer, etc.

The Physicians left to right are Drs. Frederick E. Ems, Siegfried Ursell, Alfred Rothschild, and Siegfried Bach. The nurse is Sister Marie.

Photo: Dr. Frederick E. Ems







## THE LONG AND SHORT OF IT

From Your Editor's Reading

### A PORTENT?

Tony Anastasia, the longshoremen's leader, is moving ahead with plans for a five-story hospital for his Brooklyn dock workers and their families. The waterfront boss said the new longshoremen's contract, approved last week, increases management's annual welfare "contribution" to \$1.2 million.

Tony A. said he expects to break ground within two months and when it's completed it will have no cash registers. "That way," he said, "you just sign in and out, everything is free and nobody steals nothing."

*The New York World-Telegram and Sun*  
December 14, 1959

### The Paradox of the Antibody Response to Streptodornase

The paradoxical infrequency with which an antibody response to streptococcal desoxyribonuclease (streptodornase, Dnase) has been noted to develop following streptococcal infection can be explained by the demonstration of three immunologically distinct desoxyribonucleases, designated streptococcal Dnases A, B and C. Antibody responses to Dnases A and C occur rarely, whereas antibody responses to the more common antigen, Dnase B, occur regularly following streptococcal infection. The frequency and magnitude of the antibody response to Dnase B make it comparable to the antistreptolysin O test as a reliable indicator of recent streptococcal infection in patients in

whom the diagnosis of acute rheumatic fever is being considered. The anti-Dnase B test is particularly useful in patients with acute rheumatic fever who present with low or borderline antistreptolysin O titers. In such patients the anti-Dnase B titer is often unquestionably elevated.

LEWIS W. WANAMAKER, M.D.  
*The Am. J. of Med.* (1959)  
Vol. XXVII, No. 4, Pp. 567-574.

### Oral Theophylline Compounds in Chronic Asthma

The effectiveness of treatment of chronic asthma with oral theophylline sodium glycinate has been compared in a blind trial with that of aminophylline, the dosage of theophylline being identical. It has been shown that the theophylline sodium glycinate produced no better improvement in the patients' symptoms, neither did it give fewer side-effects than the aminophylline.

C. D. R. PENGELLY, M.D. and  
WILLIAM BROCKBANK, M.D.  
*Brit. Med. J.* (1959) No. 5156, Pp. 866-867.

### Fluorescent Antiglobulin Studies in Leukopenic and Related Disorders

A method for studying leukocyte immunology by the fluorescent antiglobulin technique is described.

The results with sera from various disease states are reported. The data presented are consistent with the concept that human anti-leukocyte globulins may be directed against

the nucleus or against the cytoplasm.

Antinuclear globulins were detected in the sera of all patients with systemic lupus erythematosus (SLE) and Felty's syndrome studied, and in two cases of apparently uncomplicated rheumatoid arthritis. These findings suggest that Felty's syndrome may be a connecting link of a disease spectrum involving simple rheumatoid arthritis and SLE.

Evidence that a circulating factor present in patients with Felty's syndrome may be involved in the pathogenesis of the leukopenia was obtained in two instances by plasma transfusion.

PAUL CALABRESI, EARLY A. EDWARDS  
and ROBERT F. SCHILLING  
*The J. of Clin. Invest.* (1959)  
Vol. 38, No. 11, Pp. 2091-2100.

### Serum-Amylase Levels During Steroid Therapy

The serum-amylase levels of 38 patients treated with steroids for various conditions were compared with those of a control group.

A statistically significant rise was found in the group having steroids; but it was so slight that there was doubt whether pancreatic lesions could be responsible.

In 1 case a grossly elevated serum-amylase level may have resulted from steroid therapy.

BASIL M. RIFKIND, M. B. GLASG  
*The Lancet* (1959) Vol. II, No. 7107, Pp. 826-827.

### Effect of Bilateral Ovariectomy on Coronary-Artery Disease and Serum-Lipid Levels

In women, the incidence of clinical manifestations of coronary-artery disease rises rapidly during and after the sixth decade. Serum-lipid levels also rise significantly after the age of 50.

Two groups of women who had either one or both ovaries removed 20 or more years previously when aged 35 or less were studied. Bilateral ovariectomy was followed by the premature development of clinical coronary-artery disease and significant elevation of the serum-lipid levels.

Ovarian estrogen secretion seems to be inversely related to the development of coronary-

artery disease and to elevated serum-lipid levels.

Estrogen-replacement therapy should probably always be given to women under 50 years of age who, for gynaecological reasons, have had both ovaries removed or irradiated.

M. F. OLIVER, M.D. and G. S. BOYD, Ph.D.  
*The Lancet* (1959) No. 7105, Vol. II, Pp. 690-694.

### The Effects of Diuretics on Portal Venous Pressure

Using intrasplenic pressure as an index of portal venous pressure, measurements were made in ten patients with portal cirrhosis during treatment of ascites with chlorothiazide or mersalyl.

Intrasplenic pressure fell during treatment in every patient except one, and in four it reached normal levels.

The clinical response to treatment was related to the level of intrasplenic pressure after treatment and in each of the six patients in whom ascites was not lost showed greater pressures than this after treatment.

Thus probably the principal mechanism by which diuretics relieve ascites is by reduction of portal venous pressure.

Measurements after a single dose of chlorothiazide showed that the fall in intrasplenic pressure occurred within 8 hours and was related to the diuretic response.

MICHAEL ATKINSON, M.D., M.R.C.P.  
*The Lancet* (1959) Vol. II, No. 7107, Pp. 819-823.

### Cancer in Ulcerative Colitis

From reported cases, cancer of the large intestine seems to be very much commoner in ulcerative colitis than in previously healthy patients; the incidence in medical series is between 3% and 4%, twice as high in surgical series, and 30% when ulcerative colitis has been present for ten years or more. In a personal series of 222 surgical cases the overall incidence has been 6.7%, rising to 17% in those with ulcerative colitis of ten or more years' duration.

An analysis of this series together with others suggests that the five-year-survival rate in cases

of carcinoma complicating ulcerative colitis is no higher than 18.6%.

The average age at which carcinoma develops is 42 years in ulcerative colitis, compared with 63 years in previously healthy people.

Carcinoma may develop after a quiescent or healing phase. The lesion can be difficult to detect clinically, radiologically, and on naked-eye inspection of the bowel after removal.

Simple deflection of the faecal stream by ileostomy does not protect the bowel from malignant change, which can arise both in retained and in defunctioned large intestine and in a functioning rectum after ileoproctostomy.

GEOFFREY SLANEY, M.Sc., M.B. and  
BRYAN N. BROOKE, M.D., M.Chir.  
*The Lancet* (1959) No. 7105, Vol. II, Pp. 694-698.

#### Parkinsonism Due to Midbrain Compression

Three examples of parkinsonian tremor and rigidity were associated with intracranial tumors.

These effects were probably brought about by compression of the midbrain—a view supported by the site of the pathological process in parkinsonism, and by the effects of lesions produced experimentally in the midbrain of monkeys.

LESLIE OLIVER, M.B., F.R.C.S., F.A.C.S.  
*The Lancet* (1959) Vol. II, No. 7107, Pp. 817-819.

#### Benign Recurrent Intrahepatic "Obstructive" Jaundice

Two cases of an apparently hitherto unrecorded type of recurrent obstructive jaundice are described.

The disorder is characterized by recurrent attacks of jaundice and itching, each lasting months or even years, associated with an "obstructive" pattern in the liver-function tests. No abnormality can be found during periods of remission.

The radiological and surgical findings indicate that the lesion is intrahepatic, but there are no characteristic histological changes in the liver other than those suggesting intrahepatic

biliary obstruction. The prognosis for each attack is good, provided that the nutritional complications are treated.

The aetiology is unknown.

W. H. J. SUMMERSKILL, M.A., D.M., M.R.C.P.  
*The Lancet* (1959) No. 7105, Vol. II, Pp. 686-690.

#### Pituitary Tumours Manifested After Adrenalectomy

A girl of 15 and a woman of 34, with Cushing's syndrome, responded well to subtotal adrenalectomy. Subsequently they became deeply pigmented, and showed radiographic evidence of pituitary-fossa enlargement. Three years after operation the first died from the local effects of a transitional-basophil carcinoma of the pituitary, and the second had an adenoma of similar histological structure removed surgically.

D. A. D. MONTGOMERY, M.D.,  
R. B. WELBOURN, M.D.,  
W. T. E. McCaughey, M.D. and  
C. A. GLEADHILL, M.D.  
*The Lancet* (1959) Vol. II, No. 7105, Pp. 707-710.

#### Nasal Carrier Rate of Antibiotic-Resistant Staphylococci

"An examination was performed to investigate (a) the influence of antibiotic therapy on the frequency and the pattern of resistance in pathogenic staphylococci as present in the vestibulum nasi of 587 patients at the moment of discharge; (b) the fate of the resistant staphylococci after the patients were discharged, followed up in 61 patients, as compared with the fate of sensitive staphylococci, taken along from the hospital in 21 patients, and the course of the further carrier rate in 52 patients who left hospital without a pathogenic *Staphylococcus* in the vestibulum nasi; (c) the spread of these resistant hospital staphylococci in 455 family members and household contacts of 138 patients in a period of 6 to 12 months after discharge.

At the moment of discharge about 40% of the patients were carriers of a penicillin-resistant *Staphylococcus*; 30%, of a streptomycin-resistant strain; 25%, of a tetracycline-resistant one; 9%, of a chloramphenicol-resistant

culture, and 2%, of an erythromycin-resistant strain.

Antibiotic therapy in the hospital promotes the colonization of resistant hospital staphylococci in the vestibulum nasi but is not a necessary factor.

The total pattern of resistance of the colonizing *Staphylococcus* is mainly decided by the pattern of resistance of the *Staphylococcus* strain circulating in the hospital at the moment and only partly by the type of antibiotic therapy. The colonization, however, will happen by preference by a strain resistant to the antibiotic therapy given at that moment.

Besides the influence of antibiotic therapy, there seems to be a private disposition of the patients, which also is of importance in deciding whether the patient will acquire a hospital *Staphylococcus* in his vestibulum nasi.

After discharge a large part of the hospital strains acquired by the patients gets lost. After 6-12 months the carrier rate for pathogenic staphylococci and the resistance rate for penicillin has become normal, while resistance against chloramphenicol has disappeared completely. The rate for streptomycin and tetracycline resistance at that moment, however, is still higher than normal.

The decrease in chloramphenicol resistance is based partly on loss of the resistant strains but also in a considerable part on loss of resistance, while the strain itself stays present in the patient. The decrease in resistance against the other antibiotics is, with a few exceptions for tetracycline resistance, due only to loss of the resistant strains.

Transfer of resistant strains from the vestibulum nasi of discharged patients occurs in 8% of the family members and household contacts and in 11% of the families of those patients discharged with a resistant *Staphylococcus*. Figured on all discharged patients together, the percentages of transfer are 3% of the family members or household contacts and 4.5% of the families.

In about 60% of the resistant staphylococci in the family members the origin of the strain could be traced to direct or indirect contact

with the hospital microflora (hospitalization, visit to outpatient departments, visit to hospitalized relations, transfer from discharged patients).

Antibiotic resistance in pathogenic staphylococci is mainly an epidemiologic problem."

W. R. O. GOSLINGS and K. BUCHLI  
*Arch. of Int. Med.* (1958) Vol. 102, No. 5, P. 713.

#### Acute Attack of Asthma in Childhood

"The child with an acute attack of asthma should be treated initially with the well-known, time-tried, and proven medications and methods. Among these are bed rest, elimination of irritants in the environment, and the judicious use of bronchodilators, such as epinephrine and ephedrine. Under certain circumstances aminophylline may be required. Antihistamines are sometimes useful. Expectorants, sedation, antibiotics, or chemotherapy may also be indicated. If rapid improvement does not follow the above procedures within 12 to 24 hours, short-term steroid therapy with prednisone should be instituted.

This has been highly successful in terminating severe attacks of asthma and preventing the development of status asthmaticus. I have used it for five to seven days, beginning with 10 to 20 mg. daily, depending on the severity of the condition and the age of the patient. The dosage is rapidly reduced and treatment terminated by the fifth to the seventh day. When prednisone is used for short-term therapy in the manner outlined, I have not encountered any side-reactions other than rare instances of gastric disturbance.

In contradistinction to short-term therapy, the prolonged use of steroids for the treatment of asthma in children entail considerable danger and is not recommended for the routine treatment of the asthmatic child. Such usage should be reserved for the occasional patient with intractable asthma not responding to the standard methods of allergic investigation and treatment."

SAMUEL J. LEVIN  
*J. of Dis. of Children* (1959)  
Vol. 97, No. 4, P. 78, 438.

### **Staphylococcal Septicaemia**

"The present series of cases confirmed an impression that staphylococcal septicaemia had increased in recent years. Previous studies of the epidemiology of staphylococcal infection in Australia provide a basis for assessing the relative importance of the factors contributing to this increased incidence. In 1953 and 1954, infections with a new strain of *Staphylococcus aureus* occurred in maternity hospitals (Isbister, Durie, Rountree, and Freeman 1954, Rountree and Freeman 1955) and the strain responsible was identified with a new phage, 80.

Most strains of this type are also lysed by phage 81 (Bynoe et al. 1956) and can therefore be described as phage-type 80/81. These strains are now widespread, not only in Australia (Rountree and Beard 1958) but also in other countries (Blair and Carr 1958).

The whole of the increased incidence of staphylococcal septicaemia in patients admitted with infection in 1955 and 1956 was due to strains of this type. In 1957 seven other types were also found, but two of these were closely related to the 80/81 strain. In contrast to the cases of septicaemia admitted before 1955, in which the portal of entry of the organism could rarely be determined, infections with phage-type 80/81 strains commonly started as simple infections of the cutaneous tissues and were followed rapidly by septicaemia.

In addition to the cases reported here, there was also a number in which this strain caused fatal staphylococcal pneumonia (Purser 1958). Gresham and Gleeson-White (1957) have described cases of staphylococcal pneumonia in which death occurred without previous clinical evidence of acute infection. Some of the cases at this hospital presented a similar picture; these have not been included in the present series as there was no bacteriological evidence of involvement of tissues other than the respiratory tract, but they emphasize the pathogenicity of this particular staphylococcus. Nevertheless the prognosis among patients admitted with infection was not significantly worse in those infected with 80/81 strains (43.5%

of whom died) than it was in those infected with various other phage-type (39% of whom died).

It can be concluded that the chief factor responsible for the increase in staphylococcal septicaemia in patients infected outside hospital was the appearance of this new strain and its spread in the general community. On the other hand, the increased incidence of generalized infection in hospital-infected patients is due to the interaction of several factors. These include: (1) the establishment in the hospital environment of strains of staphylococci with multiple antibiotic resistance, and consequent failure of antibiotic "covers" for surgery; and (2) the increased use of protracted intravenous therapy. Improvements in surgical techniques have made possible long operations on patients who previously would have been considered inoperable, and whose clinical condition may have lowered their power to resist staphylococcal infection. In several cases in this series there was little doubt that the administration of cortisone had contributed to the loss of defensive mechanisms normally inhibiting invasion by staphylococci.

The prognosis for patients infected in hospital was clearly poorer than for those admitted with infection, the mortality-rate in the former being 77.5% compared with 41.3% in the latter. Nevertheless, in 1957 there was an improvement in the death-rate of those infected in hospital: 5 out of 12 patients recovered, compared with only 4 of the 28 infected in previous years. This improvement coincided with increased awareness of the problem of cross-infection at this hospital, leading to earlier diagnosis of septicaemia and aggressive treatment with appropriate antibiotics.

In only 1 patient cross-infected in hospital was there evidence of staphylococcal enterocolitis, which has been reported in other countries as a cause of fatal hospital infection (Cook et al. 1957). Where organisms from such cases have been phage-typed they have been shown to belong to phage-group III, but they have been of different patterns from the

group-III strains found here. This suggests that not all strains of group-III staphylococci may be capable of causing staphylococcal diarrhoea.

The many cases of staphylococcal septicaemia diagnosed in 1952-57 underline the magnitude of the staphylococcal problem and the potential seriousness of infection with these bacteria. Possibly our experience may not be representative of that in other hospitals and localities. This is a large teaching hospital, and some of the patients in the present series were transferred from other hospitals where they had become infected; and a few of those infected outside hospital had been transferred from the country. These cases were, however, only a small proportion of the whole series, and there seems no doubt that the increase in incidence of these infections in New South Wales is real."

J. E. HASSALL and P. M. ROUNTREE  
*The Lancet* (1959) Vol. 1, No. 7066, p. 216.

### Short-Term Hormone Therapy

"The results of short-term hormone therapy administered for an average period of seven days in 53 patient attacks of carditis confirm our previous results in 55 patients with carditis of three to twenty-one days' duration.

Of 36 patients, carditis was of three to ten days' duration in 30, and eleven to twenty-one days' in 6. Carditis was terminated without clinical evidence of residual cardiac damage in those with initial attacks or increased residual damage in recurrent attacks. Patients were ambulatory two or three weeks from the onset of therapy.

Of 17 patients in initial and recurrent attacks of carditis of twenty-two days' to four months' duration, progressive symptoms of carditis were terminated without further increase of residual cardiac damage beyond that present at the onset of therapy.

The gross and histologic findings in 38 patients with carditis of variable duration who received symptomatic therapy revealed that predominantly reversible lesions characterized the findings among children with carditis of short

duration, in contrast to the minimal reversible lesions and extensive irreversible damage sustained when the carditis was of longer duration.

In 24 initial attacks of short duration, in which new systolic and diastolic murmurs were present, the valve leaflets were delicate. The heart weight was one or two times the expected weight when the duration was less than one month and three or four times when the duration was longer. There was a close correlation between radioscopic estimate of heart size and the heart weight.

In active carditis short-term hormone therapy will terminate the inflammatory process irrespective of its duration. Only with early, adequate hormone therapy can residual cardiac damage be expected to be prevented or minimized."

MAY G. WILSON and WAN NGO LIM  
*The New Eng. of Med.* (1959)  
Vol. 260, No. 16, 806-07.

### Rheumatic Fever in the Adult

"In conclusion, it is emphasized that rheumatic fever is a disease whose clinical and public health importance is based on the subsequent development, in about 75 per cent of cases, of mitral stenosis, aortic insufficiency, or both. In adults beyond the age of 25, rheumatic fever is rare when judged by this criterion of subsequent valvular disease. In such adults rheumatic fever should be diagnosed only when 2 of the major criteria of Jones (modified) are present, which means essentially arthritis and carditis, but carditis in the adult should be diagnosed only on the appearance of a diastolic murmur not previously present. When nondeforming, febrile polyarthritis occurs without carditis in the adult after a streptococcus A infection, when it is associated with a high serum antistreptolysin titer, when it promptly responds to salicylate therapy, and when other causes of arthritis are excluded, it should be termed post-streptococcal arthritis, not rheumatic fever, because mitral stenosis and aortic regurgitation rarely if ever follow such arthritis. In order to avoid errors in diagnosis and treatment, unexplained fever, pericarditis, or con-

gestive heart failure in adults with rheumatic heart disease should rarely if ever be attributed to activation of rheumatic fever. There is need for follow-up study of adults who experience their first attack of so-called rheumatic fever after the age of 25. If it can be demonstrated that the characteristic valve lesions follow post-streptococcal arthritis in adults as frequently as in children, the traditional concept of rheumatic fever can be re-instated. But in the absence of such evidence the serious prognosis with respect to subsequent cardiac disturbance, the prolonged inactivation, and the continuous prophylactic therapy for rheumatic fever in childhood do not appear warranted in the adult past the age of 25."

CHARLES K. FRIEDBERG

*Circulation* (1959) Vol. XIX, No. 2, P. 164.

#### Diuretic Effect of Steroid Therapy in Obstinate Heart Failure

"Factors which contribute to salt and water retention in congestive heart failure are reviewed, with particular reference to the endocrine system.

Clinical observation of 14 patients with chronic congestive heart failure suggested an initial coexistent endocrine overactivity followed subsequently by adrenocortical insufficiency.

This premise was supported by the presence of hyponatraemia, a normal or elevated serum-potassium level with an increased blood urea in 14 patients with chronic heart failure which had become resistant to therapy with digitalis, a low-salt diet, and diuretics.

The urinary excretion of 17-ketosteroids was estimated in four of these patients, and in two the corticoid excretion was also assessed. Subnormal values were obtained in each instance, and in one patient were consistent with a diagnosis of Addison's disease. Following corticotrophin administration the urinary excretion of these steroids increased in each patient and was accepted as evidence that hypoadrenocorticism was due to anterior pituitary rather than adrenocortical failure.

Replacement therapy, using prednisolone, induced a greatly enhanced response to diuretics

in all 13 patients who received this treatment. All were relieved of congestive heart failure and also, when coexistent, of left ventricular failure. Two patients died following pulmonary emboli.

A hypothesis is advanced regarding the endocrine adjustments which occur in heart failure and which could lead to the formation of oedema. The importance of these adjustments is described in relation to the treatment of heart failure."

J. N. MICKERSON and J. SWALE  
*Brit. Med. J.* (1959) I:883.

#### Coronary-Artery Disease and Obesity

Forty-eight patients with coronary-artery disease have been compared with fifty-two healthy controls in respect of relative weight and body fat as measured by skinfold calliper.

No significant difference was found in the relative weight of the two groups, but the patients had a significant increase in body fat as compared to the controls.

KENNETH SANDERS, M.D.  
*The Lancet* (1959) No. 7100, Vol. II, pp. 432-435.

#### Effects of Progesterone in Severe Pulmonary Emphysema

1. Daily administration of intramuscular progesterone in oil produced an increase in both the total ventilation and alveolar ventilation in seven patients with severe pulmonary emphysema and in two normal subjects.

2. This hyperventilatory effect of progesterone was accompanied by a significant fall in carbon dioxide tension in only three of the seven emphysematous patients studied.

3. It seems that the alveolar ventilation must show a greater percentage increase than the total ventilation in order for the carbon dioxide tension to be reduced.

4. In three of the seven emphysematous patients studied, the increased oxygen consumption was due to increased work of breathing as a result of hyperventilation.

5. There was no evidence of a bronchodilator effect of progesterone.

6. Although the ventilatory response to carbon dioxide inhalation demonstrated a lower

threshold to carbon dioxide during progesterone therapy, the evidence was inconclusive as to whether progesterone actually increased the sensitivity of the respiratory center.

7. The one emphysematous patient studied showed less of a response to carbon dioxide inhalation than the normal subjects. This diminished response was not felt to indicate necessarily a decreased sensitivity of the respiratory center, as it may have been due to both the fact that his oxygen consumption doubled and that his total ventilation approached his maximum breathing capacity.

JAMES H. CULLEN, M.D., VICTOR C. BRUM, M.S.  
and WILLIAM U. REIDT, M.D.

*The Am. J. of Med.* (1959)  
Vol. XXVII, No. 4, pp. 551-557.

### **Benign Streptococcal Sore Throat**

The significance of Lancefield group-A streptococci in acute sore throat has been assessed by studying the spread of this organism in a closed healthy community, and the isolation rates from patients from similar populations with apoparadic acute sore throat.

Lancefield group-A streptococci were isolated from 5-11% of the closed community and this increased to 6.5-20.5% after three to four weeks of communal life without cases of sore throat occurring. In contrast, group-A streptococci were isolated from 57-88% of the patients with sore throat.

Streptococcal and non-streptococcal cases were indistinguishable clinically. Only 16% of patients with group-A streptococci showed a significant rise in antistreptolysin-O titre. No first attacks of rheumatic fever were seen.

The isolation of group-A streptococci in patients with acute sore throat does not necessarily imply that streptococci are the primary cause of the illness. Most of our patients seem to have suffered from a benign form of streptococcal sore throat in which the streptococcus played an opportunist role.

It follows that treatment with penicillin should be reserved for patients who have had

rheumatic fever in the past, and for epidemics of streptococcal infection, when organisms of enhanced virulence may appear. If given, the course of penicillin should be adequate, and should last about seven to ten days.

W. BRUMFITT, F. O'GRADY and  
J. D. H. SLATER

*The Lancet* (1959) No. 7100, Vol. II, pp. 419-423.

### **Observations on the Pathogenesis of Gastric Ulcer**

The junction of the pyloric mucosa and the acid-bearing mucosa of the stomach commonly extends above the level of the incisura. The pyloric mucosa is the site of predilection of gastric ulcers; and the vast majority of such ulcers are situated in the vicinity of the incisura angularis.

The histological and secretory pattern of three types of gastric ulcers—prepyloric ulcers, gastric ulcers associated with duodenal ulcers, and other gastric ulcers—reflect differences in their situation in the stomach.

Around gastric ulcers a centrifugally distributed zonal gastritis may involve the acid-bearing area. This may depress the secretion of acid.

Our observations suggest an aetiological similarity between gastric ulcers and duodenal ulcers.

I. N. MARKS, M.B., B.Sc. and  
HARRY SHAY, M.D.

*The Lancet* (1959) No. 7083, Vol. I, pp. 1107-1110.

### **Oral Thrush in Infancy Treated with Nystatin**

Of 55 infants with oral moniliasis, the 29 treated with nystatin did better than the 26 treated with gentian-violet.

The case with which nystatin can be administered and the absence of staining make it the remedy of choice.

The present cost of nystatin is the only factor operating against its general application.

ROSEMARY D. GRAHAM, M.B.  
*The Lancet* (1959) No. 7103, Vol. II, pp. 600-601.



# How to Avoid Breach of Contract Suits

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**P**hysicians frequently think of liability for damages to patients in connection with malpractice cases. Every physician is covered, for example by malpractice insurance.

Doctors hear very little about another form of legal action in which patients recover—namely breach of contract. Claims against doctors for breach of contract are not as numerous as malpractice actions, but their occurrence is by no means insignificant.

—And they are a lot easier to prove!

The gist of a malpractice action is negligence. In most instances expert testimony, hard to come by, is essential to prove that negligence.

In an action on a contract a jury must be satisfied essentially on three counts:

- 1) did the doctor make a promise?
- 2) was there consideration for the promise?
- 3) did the doctor fail to perform?

No element of negligence enters into this suit. A doctor who uses the utmost skill and care is as open to damages as the one who is

careless, if his performance falls below his promises.

Nor must this promise be made in writing. The doctor who casually reassures a worried patient that after the operation "he'll be as good as new" may later find himself sued on just that statement.

A dentist agreed to make partial upper and lower plates for plaintiff to "her complete satisfaction" for \$400. The plates did not fit properly, slipped about in patient's mouth, and were uncomfortable. They caused growths in her cheek from the constant biting, discoloration and pigmentation. There was no evidence of negligent or unskillful work, and patient's dissatisfaction was real, not feigned.

The jury awarded patient \$1150, of which \$750 was for pain and suffering and \$400 for the cost of the plates. The Appellate Court, however, disallowed the damages for pain and suffering.<sup>1</sup> Although plaintiff recovered only for the cost of the plates, in a malpractice action plaintiff would have recovered nothing.

### **Contracts to Guarantee a Cure**

One of the maxims of malpractice law is that the doctor does not guarantee a cure, or warrant that his treatment will be successful. But there is nothing (except his common sense) to prevent a doctor from making a special contract to effect a cure.

Some years ago it had been argued that such a contract was invalid, as against public policy. The reason suggested was that enforcement of contracts to cure would dissuade physicians from encouraging patients and giving them hope as an important aid to their improvement or recovery, in the fear that these words would be taken as a promise. A New Hampshire Court struck down this argument in 1932, pointing out that it was a simple matter for a doctor to make it definite that he guarantees no good result.<sup>2</sup>

Doctor diagnosed plaintiff's trouble as a diseased appendix. Plaintiff indicated he thought he had gallstones. Doctor said: "I will remove the gallstones, the appendix and as I told you, furthermore, I will remove all causes of your disease, and I will certainly guarantee to turn you out a new man within two or three weeks." The appendix was removed, but plaintiff's symptoms remained the same. Two months later another physician removed a gallstone. Plaintiff recovered damages for breach of contract.<sup>3</sup>

As the Court said in a New York case: "If the doctor makes a contract to effect a cure and fails to do so, he is liable for breach of contract even though he uses the highest possible professional skill."<sup>4</sup>

This, of course, eliminates the burdensome problem of proof of negligence. In another New York case involving a dental surgeon, defendant was extracting four teeth from plaintiff when a gold inlay became detached from one tooth and lodged in plaintiff's throat. Proof of negligence, if indeed any existed, would have been difficult. Plaintiff alleged a contract "to extract the teeth and each and every part thereof from within the plaintiff's body." The breach claimed was the failure to remove the gold filling from plaintiff's body. No negligence was

alleged. The Court sent the case to the jury on the issue of the existence of the contract. If it existed defendant would be liable on his contract regardless of the degree of care exercised.<sup>5</sup>

Patient was infected with syphilis. Defendant contracted to cure her of this disease. Death followed immediately upon the giving of neosalversan in the course of treatment by defendant. The court held that if the jury believed there was such a contract, the death itself would be a breach of the agreement, and no question of negligent conduct on the part of defendant in the way in which he treated disease is relevant to the issue presented. The single issue presented was whether there was a contract to effect a cure. Proper practice in treating the disease had no relevance to this issue.<sup>6</sup>

### **Consideration**

Every contract must be supported by considerations, i.e., either payment or a promise to pay, or some other benefit. Moreover, past consideration will not support a subsequent promise.

Similarly a physician's guarantee that an operation will be successful must be supported by a consideration.

Plaintiff sustained an injury to the thumb of his left hand which caused the first joint of the thumb to become stiff. Some six weeks later he asked defendant what caused the stiffness. Defendant replied that the tendons had been severed, and that it could be fixed by a very simple operation which would cost \$25 to \$50. Plaintiff agreed to the operation. Thereupon defendant remarked: "I'll guarantee your hand will be 100% efficient after the operation." The court held that this was a gratuitous remark, not supported by any consideration. "What was the consideration for the guaranty? What was the benefit to be received by the defendant for the warranty? The only consideration or benefit for this whole transaction was the fee of from \$25 to \$50 for the operation." A verdict of \$5,000 for plaintiff was set aside and judgment entered for defendant.<sup>7</sup>

### **Statute of Limitations**

Another reason for suing in contract rather than in tort (malpractice) is the longer statute of limitations, applicable to a contract action. In many jurisdictions a six year limitations period is provided for contracts, while the malpractice statutes run after one or two years. Moreover in malpractice actions, the statute begins to run at the time of the negligent act, not when plaintiff discovers the harm.

Plaintiff alleged that defendant-physician contracted to perform a minor operation, removal of a growth by fulguration, a procedure which would not involve incision through the abdominal wall, and to do the job "in a good and workmanlike manner," and "to cure" him in "one or two days." Instead defendant punctured an organ, necessitating a major operation and hospitalization for a month. Plaintiff sued after the malpractice, but before the contract, limitations had run. The court upheld the action stating that a doctor and his patient are at liberty to contract for a particular result and if that result be not attained, a cause of action for breach of contract results which is entirely separate from one for malpractice.<sup>8</sup>

### **Res Judicata**

There is a third reason for a plaintiff to elect to sue on a contract rather than in tort. Suppose he has sued for malpractice and lost because he couldn't prove negligence. In some jurisdictions such as New York<sup>9</sup> and New Hampshire,<sup>10</sup> if he can make out a contract, he can start a second suit. In effect he gets two cracks at the nut.

In Massachusetts on the other hand the contract suit is barred if judgment has previously gone against plaintiff in a malpractice suit arising out of the same set of facts.<sup>11</sup> The Massachusetts court held that since both suits were based essentially on the same claim the former suit barred the latter.

Res judicata is to a civil action what double jeopardy is to a criminal action.

Double jeopardy means a person can't be tried twice for the same offense. Res judicata

means a person can't be sued twice on the same set of facts by the same plaintiff.

The New York and New Hampshire decisions hold that malpractice and contract actions do not bar each other because they require different facts, different proof, and result in different damages.

### **Damages**

The measure of damages in a contract case is to put the plaintiff in as good a position as he would have been had the contract not been breached. Compensation is given for only those injuries which were reasonably foreseeable as a probable result of the breach when the contract was made.

One of the maxims in the field of contracts is that no damages are awarded for pain and suffering. Recovery in a contract case normally was limited to consequential medical and convalescent expenditures, loss of wages, loss of consortium, and perhaps other related losses directly traceable to the breach.

The torts rule of damages normally allows for physical pain, mental suffering, and impaired earning power.

There have been breach of contract cases however, in which damages were awarded for pain and suffering by tortious reasoning of the court. In an early (1915) Mississippi case a physician who had contracted to attend plaintiff during her confinement and failed to do so was liable for the pain and suffering resulting therefrom.<sup>12</sup> The physician's plea that he couldn't leave another patient was no defense.

The same result held in a case where a defendant failed to provide hospital services for plaintiff;<sup>13</sup> where a private hospital exposed plaintiff's wife to the outdoors so that she died;<sup>14</sup> and where defendant failed to provide medical care and attention to employee's child contrary to agreement.<sup>15</sup> In all these cases the court held that pain and suffering were fairly within the contemplation of the parties when the contract was made.

The more recent case (1957) of *Stewart v. Rudner*<sup>16</sup> upheld the right of a woman whose child was stillborn to recover damages for

mental suffering in the amount of \$5,000.

Plaintiff a woman of 37, was married to a man of 63. She had two stillbirths previous to this conception. She and her husband were both fearful of another stillbirth. The situation was explained to defendant who agreed to perform a Caesarean. The couple believe the fetus had come to full term in July. But in visits made in August the defendant said "everything was normal and in good condition," and sent them away.

On September 4 labor pains commenced and persisted. The doctor sent plaintiff home instead of to surgery. On September 5 plaintiff was delivered by an episiotomy. The child was dead.

The court held that there is marked trend toward recovery for mental disturbance in contracts as well as torts, and that emotional damage is just as real and compensable as physical damage. A passage from the court's opinion is worthy of quotation as indicative of the reasoning other courts may well adopt in this field:

"When we have a contract concerned not with trade and commerce but with life and death, not with profit but with elements of personality, not with pecuniary aggrandizement but with matters of mental concern and solicitude, then a breach of duty with respect to such contracts will inevitably and necessarily result in mental anguish, pain and suffering. In such cases the parties may reasonably be said to have contracted with reference to the payment of damages therefore in the event of breach. Far from being outside the contemplation of the parties they are an integral and inseparable part of it."<sup>17</sup>

The court however warned that "the doctor's therapeutic reassurance that his patient will be all right, not to worry, must not be converted into a binding promise by the disappointed or quarrelsome."<sup>18</sup>

#### Sterilization Contracts

A court will not aid an illegal contract. A doctor who contracts to perform an abortion for example can not later be sued on his failure

to perform; nor could he sue for the fee agreed upon.

A recent Pennsylvania case examined the public policy on sterilization, and came up with a curious result. Plaintiff, the father of four children, contracted with the defendant for a vasectomy because he couldn't afford to support a larger family. After the operation his wife gave birth. Plaintiff sued the doctor for breach of the contract to make plaintiff "immediately and permanently sterile and guaranteed the results thereof." The damages he sought were for the expense of rearing and educating the child. The court held:

1) a doctor and his patient can contract for the particular results of an operation.

2) a contract to sterilize is not against public policy—but

3) public policy forbade recovery of the damages sought.<sup>19</sup>

While it is possible that damages would be recoverable for hospital and other allied expenses on such a contract a test case hasn't yet arisen.

#### Are Breach of Contract Cases Covered by Malpractice Insurance?

New York has answered this question in the negative; the state of Washington in the affirmative.

In the New York case patient sued physician for \$15,000 for breach of contract. Patient alleged physician had agreed to "remove certain markings from the patient's face and restore it to normal in consideration of \$100." After several operations the abnormality was worse. The jury brought in a verdict of \$4000.

A new trial was ordered by the court on technical errors, and the case was then settled for \$1250. The physician then sued the insurance company for that amount plus \$2000 counsel fees and costs. *Held:* Physician lost the case. Insurance coverage for claims arising out of "malpractice, error or mistake" is clearly legally distinguishable from coverage for breach of contract. The court was particularly impressed with the fact that breach of contract imposes absolute liability on a doctor: i.e. he

is liable even though he used the highest possible professional skill.<sup>20</sup>

On an indemnity clause almost identical with the one in the New York case a Washington court reached the opposite conclusion.<sup>21</sup> The facts of this case arose out of *Schuster v. Sutherland*<sup>22</sup> discussed previously<sup>23</sup> wherein a patient recovered \$2,466.15 from a doctor on a breach of contract suit for failure of the doctor to remove a gallstone. The doctor thereupon sued the insurance company and recovered. The court said:

"The words 'malpractice,' 'error' and 'mistake' as used in this indemnity policy do not mean necessarily the same thing. If they were so intended, it was an idle thing to insert more than the word 'malpractice.' A physician may err or make a mistake, without being guilty of malpractice. This policy covers malpractice. It covers error and it covers mistake in the practice of appellant's profession; and if liability flows from either, and he is required to pay damages on that account, we think it is plain that the policy here undertook to insure against such mistake or such error as well as against malpractice."<sup>24</sup>

If the damage was not caused by malpractice, it was clearly caused by error or mistake in not removing the gallstone.

#### Breach of Warranty Cases

A hospital patient received a transfusion of impure blood and became afflicted with homologous serum hepatitis. Instead of alleging negligence and suing in tort plaintiff sought recovery on the theory that the supplying of blood constituted a sale within the Sales Act and that, as a consequence there attached implied warranties imposed by the statute that the blood was "reasonably fit for the purpose for which required and of merchantable quality."<sup>25</sup>

Under this theory absolute liability would be imposed on the "seller," the hospital in this instance, no matter how careful, no matter that the disease-producing potential in the blood could not possibly be discovered. The hospital would be virtually an insurer if anything were

to happen to patient as a result of bad blood.

The court held that the hospital sold services, not blood, and that there was no "sale" within the meaning of the Sales Act.<sup>26</sup>

Similarly false eyes and prosthetic devices have been held not to be warrantable commodities. *Query*: whether this theory will be carried over to the polio vaccine and serum cases, i.e., will the court say that the major part of these actions were services or a use, but not a sale of a commodity?

#### Other Contracts

A court has held that a physician's contract to furnish services for the life of the patient, for a lump sum payable at patient's death is valid. The patient's estate had argued that such a contract was void on grounds of public policy, either as furnishing an inducement to terminate patient's life, or as a wagering contract.<sup>27</sup>

The court will examine these agreements and their performance carefully. Deceased executed a power of attorney declaring that physician was to perform all future medical services for her. At her death her estate was to pay him \$2000.

From the time of the execution of the power until deceased's death physician performed no services for deceased. He turned her over to other physicians in his Clinic, and deceased was regularly billed by the Clinic for medical care and attention. Deceased paid these bills in full.

The court held that the physician could not receive any money from the estate. He had breached the terms under which the power was given by delegating all his duties to others, and performing no services.<sup>28</sup>

A "no cure, no pay" contract is valid, and a physician cannot recover for services unless he has effected a cure.<sup>29</sup> This is true even if the disease is incurable.<sup>30</sup>

If a physician and patient agree that the physician will pay for a consultant, the specialist can still recover from the patient *unless he is a party to the agreement*.<sup>31</sup>

Covenants not to compete are valid as part

of a contract for the sale of a practice, or an employment contract. Restraints of fairly long duration appear to be necessary for the protection of the purchaser because of the close personal relationship of confidence and trust established between physicians and their patients.<sup>32</sup>

An obstetrician sued for his fee of \$190 for pre-natal, delivery and post-natal care. Patient declared that he was not entitled to his fee be-

cause he had breached his contract. For a period of 2½ hours prior to birth, the doctor was not available and no pain-relieving drugs were administered to the expectant mother. The doctor then delivered the baby and provided post-natal care. Judgment was for the physician. Where a defendant accepts benefits under a contract after discovery of an alleged breach this will constitute a waiver of such breach.<sup>33</sup>

### Summary

1. *Three essential elements of a breach of contract case are: (a) a promise; (b) consideration for the promise; (c) failure to perform.*

2. *Remember: By law a doctor is not a guarantor unless he specifically makes himself one.*

3. *An oral contract is as binding as one in writing. So be careful to distinguish between reassurances of the success of treatment, to ease the mind of a patient, and promises or guarantees of success.*

4. *Be wary of loose talk and assurances, particularly when relatives of the patients are present. You're providing bait to the litigious.*

5. *If you must make a contract — put in writing. Then a record will exist of exactly what you said. The patient will find it hard to prove otherwise, or claim later modifications.*

6. *If you make a contract you are absolutely liable under it—whether or not you are negligent. So don't promise to cure an incurable disease, or to make a new man of patient, or to fix his hand as good as new.*

7. *Contract actions may prove a boon to the patient because:*

a) *they are easier to prove than malpractice actions. No expert testimony is necessary;*

b) *the statute of limitations under which they*

*operate is longer;*

c) *the patient who fails to prove malpractice may try again for a recovery in a suit on a contract.*

8. *Damages in contract actions have been limited to actual out of pocket expenses, including medical fees, hospital services, loss of earnings.*

9. *But a recent decision has opened the way to damages for pain and suffering. If followed by other jurisdictions this will raise contract damages to the same height as tort damages.*

10. *The court will not assist either party to an illegal contract.*

11. *There is a good chance that other jurisdictions will follow the New York rule and hold that breach of contract actions are not covered by malpractice insurance.*

12. *Blood, false eyes and prosthetic devices are not warrantable commodities.*

13. *Covenants not to compete as part of a sale of practice contract or employment agreement are not considered contracts in restraint of trade.*

14. *Fee agreements are honored by the courts. Courts will not inquire into the value of services where specific agreements exist.*

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 27. Zeigler v. Illinois Trust & Sav. Bank, 91 N.E. 1041 (Ill., 1910).  
 28. Trenouth v. Mulroney, 227 P. 2d 590 (Mont., 1951).  
 29. Lyle v. Andlaff, 165 S.W. 1146 (Mo., 1914).  
 30. Lake v. Baccus, 2 S.E. 2d 121 (Ga., 1939).  
 31. Garrey v. Stadler, 30 N.W. 787 (Wis., 1886).  
 32. 45 A.L.R. 2d 156 (1956).  
 33. Cartwright v. Bartholomew, 64 S.E. 2d 323 (Ga., 1951).

133 East 58th Street

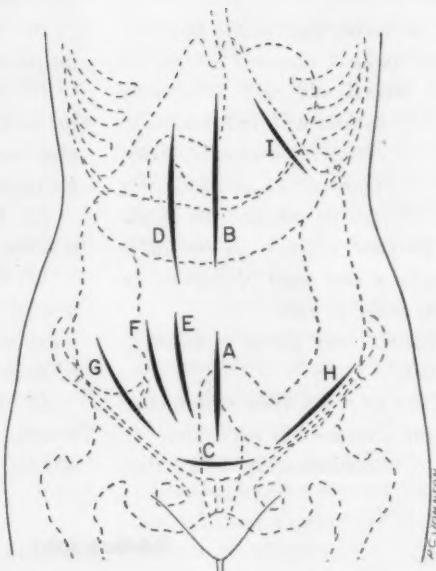


### CLINI-CLIPPING

#### ABDOMINAL INCISIONS

The most commonly used incisions are the Vertical, Transverse, Rectus and Oblique.

- A. Midline Below Umbilicus
- B. Midline Above Umbilicus
- C. Pfannenstiel
- D. Right Rectus Incision
- E. Lateral Rectus Incision
- F. Semilunac Line Incision
- G. McBurney's Incision
- H. Iliac
- I. Kucher Subcostal



# Rx for Office Leases

*"Examine them with care, especially the "fine print" which may contain items of hidden cost.*

HAROLD J. ASHE



**P**hysicians may need to keep their critical facilities when entering into lease agreements for office space. The time once was when office leases generally were for straight cash rent, unqualified by other considerations.

Now, with a marked trend toward the suburbs and outlying shopping areas by professional men, an increasing number of physicians are leaving downtown buildings for ground floor structures. Sometimes a small office building will be occupied solely by a physician; in other cases, a physician may join with a dentist to jointly lease such a building.

Professional tenants, in addition to stipulated fixed rent, may be obligating themselves for additional indefinite, but large, occupancy charges. In extreme cases these charges eventually may exceed the amount of the cash rent called for in a lease.

A physician agreeing to a cash rent he considers manageable with his practice may discover too late that occupancy costs range from twenty-five to fifty percent more than anticipated. This will reduce net earnings substantially below those anticipated. In bad years, with professional income off, a physician may be obliged to pay higher rent when he is least able to do so. This is not speculation. It has already happened to many commercial and

professional tenants. This is because, usually, too many tenants look only at the dollar rent in lease agreements and fail to read the fine print or at least discount its importance.

Additional occupancy charges may be either one or both of the following:

- (1) payment of all property tax increases;
- (2) payment of building repairs, maintenance and, in some cases, improvements.

Such additional rent charges may not seem to make rent excessive at time a lease is signed. Assuming this, a physician may consider it is immaterial whether he pays, say, \$150 a month cash rent and an estimated average of \$50 a month over the life of his lease for building repairs and property taxes or whether, on the other hand, he pays straight rent of \$200.

The only defect in this assumption is that no tenant can predict what these additional rent charges will be over a five- or ten-year period. Such costs, in practice, are usually greater than anticipated.

## Gambling on Future Costs

Landlords, although familiar with their properties, cannot make close estimates of future costs. Some are shrewd enough to pass these obligations on to unsuspecting tenants even less able to estimate future costs. Landlords

insisting on such clauses in leases are transferring some uncertainties of property ownership to tenants. Tenants signing such leases are assuming the risk of property ownership with none of the advantages or prerogatives. A physician, while adding to insecurities of his practice, is relieving his landlord of comparable insecurities of property ownership.

Consider property taxes. Taxes have been rising for years. There is no reason to expect a reversal of this trend. Tax increases are due to two factors: (1) increase in tax rates, and (2) increase in tax valuations. Thus assessed values and rates may rise in the face of properties that are aging, even to the point of obsolescence.

Consider repairs. Repair costs, both for materials and labor are continuing a long-uninterrupted climb. A certain repair cost may double within the period of a ten-year lease.

This is not to criticize landlords for looking after their own interests. This practice is underscored only to emphasize the importance of physicians reading carefully the fine print and thinking in terms of hidden rental charges. Physicians who, until now, have had suites in large buildings where cash rent is all inclusive are especially apt to ignore such considerations.

Another point worth considering, if such a lease is involved, is this: even while a property is increasing in assessed valuation, and is subject to higher taxes, its value from a professional standpoint may deteriorate. If a property is leased at the peak of its professional value, a physician may find himself burdened for five or ten years with a high cash rent, plus increasing hidden rent, coincident with its decline in value. As it becomes less valuable for professional purposes occupancy costs increase.

### Problems of Repairs

Repair charges may be negligible or be excessive. One of the principal factors determining the total amount of such expenses is the age of a property. Even if an older building appears to be in a fair state of repair at the time leased, it will cost more to keep in repair than a comparable newer building. The

state of its repair may be more apparent than real.

Even if obsolescence and repair may be apportioned over a long period, in terms of cumulative costs, this may manifest itself unevenly. Not infrequently, a tenant signs a lease just in time to acquire the dubious obligation



obligations to repair certain facilities that have been years in reaching a state of disrepair. This cost, even spread over the first year's occupancy, may double the occupancy cost and sharply reduce a physician's anticipated net earnings for the year.

By the time this repair has been made, other repairs may press for attention. Sometimes repairs are not postponable, even by weeks, and must be made immediately if a physician is to have proper use of premises. These may include wornout electrical facilities, some designed for lighter loads, and broken down plumbing and heating equipment. The first rain may expose a roof which, if nothing more, requires a patching job.

### Replacements May Be Needed

In many instances, even major repairs will not restore facilities to effective use. In this case, a physician may be obliged to pay for new replacements as a practical alternative.

When he does, such replacements become the property of his landlord if attached in any way to the property. Thus a physician actually improves his landlord's property, but he can't take such improvements with him when his lease expires. A physician can charge off such costs over the life of his lease in his income tax returns, but he will still have an additional out-of-pocket occupancy charge to the extent such costs exceed the income tax saving.

Even such maintenance charges as painting may be excessive. Here again, the older the building the greater the painting cost, due to more time being required to prepare surfaces. Porosity may be greater, with more materials required. Roofing repairs can involve a large outlay over the years.

#### Estimate First

A physician should do some careful figuring before voluntarily modernizing a landlord's building. An apparently reasonable rent on an old property with an obsolete front unsuitable for a professional office may be prohibitive, if leasing involves installation of a modern front at a tenant's expense. Such a front is

likely to cost more than anticipated. If such a building is under consideration, a physician should get a close estimate of probable cost before signing a lease. Such cost should be amortized over the life of the lease (including interest on investment) to determine the true rental cost as distinguished from cash rent only.

#### Actual Rental Costs

For example, a new front costing as little as \$3,000, and with interest at six percent of the declining unrecovered cost over a ten-year period, will represent an investment of about \$3,900, or \$390 a year average over the life of the lease. If cash rent is \$1,800 a year, this will make the real occupancy cost about \$2,190 a year, or about twenty-two percent more than the cash rent.

Even if a physician has no choice in signing a lease calling for assuming increased taxes and paying maintenance and repair bills, he should carefully compare alternative locations and properties. One location may represent a rent saving while another equally desirable property may involve a far greater occupancy cost—even when the cash rent called for is identical.



#### CORRECTION

*In the January MEDICAL TIMES (Vol. 88, No. 1), Scientific Section, page 73, in the article entitled "Medical Aspects of Urinary Calculi" by Roger Melick, a typographical error appeared in the paragraph on Aluminum Gels. The statement, ". . . such as 2040 ml. of Basaljel® . . ." should have read, ". . . such as 20-40 ml. of Basaljel® . . ."*

*We sincerely regret this error.*

# North Carolina Baptist Hospital

*Established by the North Carolina Baptist State Convention in 1922, this hospital has expanded from 80 beds to 450.*



Since its establishment in 1922 as a missionary enterprise of the North Carolina Baptist State Convention, North Carolina Baptist Hospital at Winston-Salem has been more than a community hospital.

It was conceived as a general hospital to serve Baptists from all over the state, and from the time it received its first patient on May 24, 1923, it has had a high percentage of referrals of all denominations.

One of the few hospitals in the state which at the time could be considered more than "local" in character, Baptist Hospital has expanded from 80 beds in a single five-story building to 450 teaching beds. It is the main teaching hospital of the Bowman Gray School of Medicine, which adjoins it. Buildings of the Hospital and Medical School almost cover the original 11-acre site purchased in a residential section of Winston-Salem. Last January, seven acres of adjoining land and a 124-unit apartment building were acquired to permit expansion.

A "minimal nursing care facility" of 74 rooms is planned for patients who do not need close professional attention and full hospital facilities.

The healing, training and teaching programs of the Hospital and Medical School are closely correlated, but the two institutions are administered separately.

The medical staff of the Hospital is made up of members of the faculty; the chiefs of service in the Medical School head the corresponding Hospital services.

## Church Institution

Baptist Hospital is a church corporation. Control is vested in a 24-man board of trustees appointed to four-year terms by the North Carolina Baptist State Convention. Serving under them is the chief officer of the Hospital who has the title of Administrator.

The Medical School is a division of Wake Forest College, also a Baptist institution. Established as a two-year medical school in 1902, it became a four-year Medical College in 1941 when it was moved to Winston-Salem and was renamed the Bowman Gray School of Medicine of Wake Forest College, in recognition of the benefactor who made the expansion possible. (Wake Forest College followed its School of Medicine to Winston-Salem in June 1956.)



North Carolina Baptist Hospital, Bowman Gray School of Medicine, division of Wake Forest College, is at extreme right. White-roofed structure is recently completed addition. All other buildings on 11-acre site are Hospital units. Part of T-shaped building with white roof is original hospital which opened in 1923. Immediately to left is two-story out-patient department.

Baptist Hospital and Bowman Gray benefit from their close relationship. Together the two institutions form one of the most important medical centers in the Southeast. The Hospital, air conditioned except for a small section, is equipped with seven major operating rooms and one of the few rotary Cobalt 60 teletherapy units in existence. The 32 clinics in its outpatient department last year had a total of 66,707 outpatient visits. The Hospital regularly averages some 16,000 inpatients a year.

More than 40 percent of the bed-patient-days were "service" in 1958, "service" being the Hospital's designation for work done for patients who are unable to pay the cost of their care. Service and private patients from all over North Carolina are referred to the Hospital for the treatment of obscure diseases and conditions requiring specialized equipment and skills unavailable in their home communities. Both service and private patients are used in teaching.

Operated either by the Hospital alone or jointly with the Medical School, the educational program includes these accredited schools in addition to the intern and resident programs:

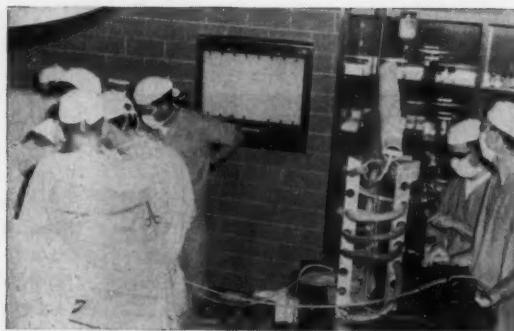
nursing, practical nursing, nurse anesthetists, x-ray technology, medical technology, medical record library science, and pastoral care.

The School of Nursing was established along with the Hospital and has had an average enrollment of 170 for a number of years. Most of the other schools were formed after the Medical School was established. These schools, with the resident and intern training programs and the clinical teaching of third and fourth year medical students of Bowman Gray, have an enrollment of more than 500. The enrollment will be considerably increased in the near future when the paramedical schools are brought under central administrative and academic control to form a paramedical college, one of the first in the nation.

#### Affiliation

An abundance of clinical material exists. Fully 95 percent of the patients, both private and service, are referrals. The outpatient department, through which all service patients clear—either for treatment in outpatient clinics or for admission to the Hospital — is very active.

In addition to its own facilities, Baptist



Heart-lung machine in use. NCB's first such device was assembled by staff from parts when complete equipment was not yet available from manufacturers.



Staff doctors take a break in cafeteria which is always open. 3,000 meals are served daily.



Patient's record is discussed by residents on rounds with chief of neuro-surgical service.

Hospital is affiliated with hospitals and sanatoriums in Winston-Salem and other cities, such as the Shriners' Hospital for Crippled Children at Greenville, S. C., Western North Carolina Sanatorium at Black Mountain, N. C., and Graylyn, in Winston-Salem. These and others are available for house officer training. In addition, the Dean's Committee of Bowman Gray is concerned with the professional operation of the 900-bed Veterans Administration Hospital at Salisbury, N. C., 38 miles southwest of Winston-Salem.

### Research

All research and training projects are carried on by the Medical School. Staff doctors are required to participate in a number of these and are encouraged to engage in others which would lead to publication of results in national journals. In recent years each staff doctor has had at least one paper in a major journal dur-

ing the course of his training, and a number have had several such papers published.

### Facilities for House Staff

The Library of Bowman Gray is available to members of the house staff. It consists of 17,000 volumes and 475 current subscriptions.

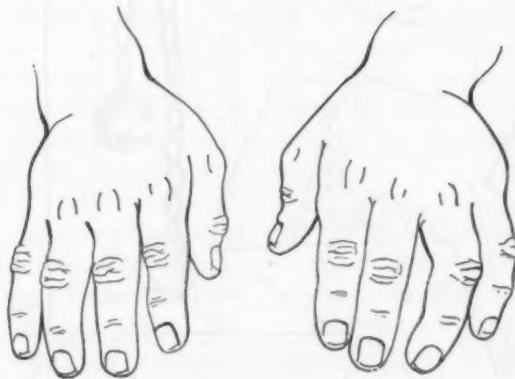
Apartments are maintained by the Hospital for the house staff. These range in size from "efficiency" to two-bedroom apartments. They are unfurnished and are assigned in accordance with the size of the family. Bachelor house officer quarters also are available.

The Hospital operates a cafeteria which is open 24 hours a day. Uniforms and laundry service are provided.

Outside housing is available within a few blocks of the Hospital, which is in one of Winston-Salem's better residential areas, away from the city's business section but close to a neighborhood shopping center.



### CLINI-CLIPPING



Pulmonary osteo-arthropathy

*In your personal list of physician heroes, here is a doctor who deserves a high place. Moved by the death of a close friend who had become insane, he struck out against the brutal treatment of the mentally ill, established humane concepts for their care.*

## A TIME FOR



**Fighting for his beliefs nearly cost this physician his life.**

# ...COMPASSION

EDWARD R. BLOOMQUIST, M.D.

*France, 1783*

A slender shaft of sunlight slanted through the dense forest surrounding the city of Paris, coming to rest on the tortured body of a young man, prostrate on the ground. His face was etched with fear, his body disfigured by physical mistreatment—mementos of confinement in a Parisian hospital-prison for the insane.

He had escaped. But these past few moments of freedom were clouded by the spectra of his depressive psychosis, a smothering emotional plague which blended well with the darkness of the encroaching night.

His half-closed eyes fell for a moment on his single treasure, a book of philosophy he had carried with him in his flight.

As an awareness of his hopelessness swept over him, however, he placed it by his side, and dropping his head into his hands, he began to weep.

France, unstable and insecure, was tottering on the verge of its great revolution. The young man, agonized by the brutal future facing his country, had lost his grip on reality. The pronouncement of his insanity had driven him into even deeper despair, for he recognized that with this stigma upon him his chances for any useful occupation in the new France were most improbable.

French citizens had little use for the insane.

## Own Affairs

The cold shroud of night descended upon the forest, sympathetically bringing with it the sweet peace of death for the exhausted youth. When his emaciated body, partially devoured by wolves, was discovered some time later, no one seemed to care. Those who heard of it, busy with their own affairs, quickly dismissed it from their minds.

There was, however, one exception to the general lack of concern. The incident had left an impression on the mind of a physician, Phillippe Pinel. The doctor had been a friend of the young man. Both were scholars. They had enjoyed philosophizing together. When the psychosis developed, its peculiar manifestations had intrigued Pinel and he studied its progress, at the same time trying to be of assistance.

## Decision

When death finally ended his friend's torture and suffering, Pinel was left with the haunting conviction there must be a better method of management of psychotic patients than that currently employed. As he continued to reflect on the tragedy and the problem, the decision materialized: Pinel would devote his life to the study and practice of psychiatry.

This choice of career was an unusual de-

parture from Pinel's interests as a child. The eldest of seven children, he was born at St. Andre d'Alayrac on April 20, 1745. Although he represented the third generation in a family of physicians, his interests excluded the Healing Arts, centering instead upon the field of classical literature.

Actually, his personality almost precluded his entrance into medicine. He was retiring, even as a small boy, and this trait was further strengthened by the death of his mother during his fifteenth year. This tragic incident affected him deeply and as much as possible he withdrew from social encounters, becoming quite diffident and interested only in studying.

A fondness for Virgil, Voltaire and Rousseau, and his habit of wandering off into the woods to read and contemplate their philosophy in solitude made him an excellent classical scholar. In 1767 he went to Toulouse where his interest expanded to include mathematics and later, physiology.

Fortunately for posterity, the intrigue of physiology stirred the Aesculapian blood in his veins and he decided to become a doctor.

Though 28 years old when he graduated in 1773, he felt insecure; the prospects of clinical practice appalled him. Delaying the inevitable, he went to Montpellier for additional education and then opened his practice.

### Failure

His early attempts at small town practice were tinged with failure. Although pleasant, his personality lacked the bombast and tendency toward self promotion which many successful physicians of that era relied upon to interest and hold their clientele. After a period of near total failure he turned to the big city, entering Paris in 1778.

Impoverished and without friends in Paris, his interest in the classics soon led him to the salon of Madame Helvetius. In a short time he became acquainted with some of the most brilliant minds of the day, for intellectuals made this salon their informal headquarters. Numbered among these scholars was the ambassador from a newly established country,

Benjamin Franklin, who nearly succeeded in persuading Pinel to migrate to America.

### Appointment

The salon society also included many of the elite, some of whom were influential in court. In time an attempt was made by these friends to introduce Pinel into Royal society. Through political connections he was appointed as physician to the King's aunts.

Flighty, caste conscious, more interested in a witty dilettante than a practical physician, this silk enshrouded society waltzed from the room after one glance at the shy, retiring young doctor. Pointing their noses toward the stratosphere they declared they would have no part of him.

His quiet, unaggressive personality cost Pinel more than his appointment at court. Unable to express himself because of self consciousness, he failed several times in the oral doctorate examination which he had to pass in order to practice in Paris.

When he finally surmounted this obstacle, Pinel still found it difficult to find employment. It was during this time that he became acquainted with the young scholar whose manic depressive psychosis ended so tragically in the Paris forest.

This unfortunate death filled Pinel with a sense of compassion for the insane. Determined to learn more about insanity, he went to a private asylum, the Petite Maison of M. Belhomme, and joined its staff.

### Practical

His diligence and practical approach to psychiatric problems soon earned him a reputation as an unusually competent alienist. His prestige was further enhanced by his directing the *Gazette de Sante*, a local health magazine devoted to articles on the popular subject of hygiene.

He had barely begun to adjust to this life when he was forced to face a new crisis. France, erupting after years of suppressed political unrest, began to devour itself in a bloody revolution. Because of his profession and his

aristocratic associates, Pinel found himself suspected of Royalist sympathies.

Despite this shadow cast upon him by the lunatic fringe promoting the Terror, good fortune came his way. His work among the insane at the Petite Maison had not gone unnoticed and soon influential friends obtained him the appointment as director of Bicêtre prison-hospital for the mentally ill.

### **Chaos**

While conditions at the Maison were far from perfect, nothing could have prepared Pinel for the chaos which met his eyes when the impersonal, ancient iron gates of Bicêtre swung open to admit the new director.

Parisian physicians had justly won a worldwide reputation for contributions in diagnosis and treatment of organic disease; but in the field of psychiatry, they possessed a mental vacuum.

Bicêtre and its companion hospital Salpêtrière were prisons in the worst sense of the word. Unbelievable brutality was inflicted upon patients under the mistaken belief their destructive, incomprehensible activities were intentionally malicious. They were considered to be and treated like wild beasts, for the majority of psychiatrists in Eighteenth Century France was inculcated with theories based upon centuries of occultism, mysticism and pseudo-religious poppycock.

### **Superior Spirits**

Long ago, in primitive times the insane had a rather enviable lot, for they were considered superior beings who saw visions and communed with the spirit world.

Later, and even today in parts of the Orient, the insane were treated with kindly toleration, for it was believed that the spirit had prematurely departed their mortal remains, leaving the latter to fend for itself, or rely upon the mercy of friends.

As centuries passed, various types of witchcraft were attributed to the insane. Spirits were thought to enter the body, taking over its activities. Although attitudes changed some-

what when Christianity became dominant, peculiar notions remained that were as ridiculous as those of primitive man.

The early Christians denied that good spirits could enter finite man, although it was agreed they could guide him in the straight and narrow. Evil spirits, however, were believed capable of assuming control of the soul. Thus, to the pathetically pious, the psychotic was a saint if his hallucinations were holy and his obsessions prayer and self mortification. If, however, the psychosis took a more worldly trend and the patient was violent, destructive and blasphemous he was declared devil possessed.

Since few were sympathetic toward the Satanic hosts, exorcism was introduced and attempts to beat the devil from the obsessed became common practice.

Witches now began to waft through the sky on their Eighteenth Century brooms and the insane were accused of voluntarily making pacts with Lucifer. This pathetic fantasy eventually passed away and Black Magic became less associated with insanity.

But the insane were no better off. With the devil safely back in Hell, no one was left to blame but the mentally ill themselves. Since their lot was now thought to be one of their own choice, it seemed reasonable to some to cast them from the human race. They were thought to belong to the lowest species of animal and were treated as such.

### **Prison Conditions**

Some doctors may have agreed with Pinel that mental illness deserved the same study, sympathy and care as physical sickness, but they were regrettably few. This fact was rather obvious to Pinel as he walked through Bicêtre. The halls were dark, filled with rubbish and excreta that spilled over from box like cells where inmates awaited death from boredom, mistreatment or terror.

Their cubbyholes possessed but one opening—a grill in the door—so small, that sunlight and fresh air were unknown quantities. The areas were never cleaned. If inmates were

inclined to rip off their clothing, they remained naked.

Except for the times when stale bread and sloppy gruel were shoved through the grills by their keepers, patients had no contact with the outside world.

Some were shackled to the wall, others held by iron collars or waist hoops. Those who could lie down on damp, knotty straw pallets were still uncomfortable because of manacles on their extremities.

As far as the citizens of France were concerned the insane were dead, yet no law existed to execute them.

Three diagnoses existed for these unfortunates. If wild, they were restrained and classified as maniacs. Those who wept in the depression of their hopelessness were termed melancholiacs. The little extra freedom permitted them went unappreciated for they were too unhappy to care. The third group were less restricted, but equally despised because of their confusion. Their diagnosis: dementia.

### **Rest and Understanding**

Pussin, the head keeper of Bicêtre was an uneducated, crude, but honest individual. It was he who guided Pinel through the dungeons, gave him his initiation to Bicêtre.

Appalled by what he saw, Pinel appealed to the head keeper for assistance in revising this pathetic situation. His pleas fell upon friendly ears, for Pussin was as disgusted with conditions around him as the new director. His position and education, however, had prevented him from doing much about his beliefs.

With Pussin's help Pinel started examining the patients and records were begun which listed their diagnoses and reactions. Any indications of possible recovery was carefully researched.

Although shackled by the public's stupidity, ignorance and bias, Pinel began to treat his charges. He utilized rest, quiet and understanding in patient management. He reduced and finally eliminated the despised purgings, blisters and bleedings so popular at the time.

The manacles, however, stayed on. The physical condition of the prison did not change, and Pinel, up to this time, was not permitted to exercise authority which could alter the situation.

### **Trio**

To obtain this authority he applied for an audience before the Commune. Tensely he outlined his plan to strike the chains and allow reasonable freedom within the prison to qualified patients.

His pleas were ignored at first, but he was insistent, convinced of the importance of his project.

Unfortunately, he was talking to a trio of judges who in their own way were mentally worse off than his inmates. Obsessed with the importance of ridding the earth of Royalty, they listened coldly to Pinel, granting him audience only because his reputation and influential friends left them with no alternative. They would have killed him had they dared for they suspected him, possibly with justification, of hiding Royalist sympathizers among his madmen.

These three judges, Robespierre, Saint Just and Couthon, were well matched. The first seemed determined to vent his wrath upon a world which had permitted him to mature without parental sympathy and in an atmosphere abounding with delinquent association. Saint Just was a sadist. Impulsive, ambitious, he stood ready to slide into prominence on the blood of innocent victims.

Then there was Couthon. It was this man, crippled, filled with resentment because of his deformity, whom Pinel finally managed to impress—but not because of any deep humanitarian interest on the part of Couthon. At the proper moment, Pinel had disrobed Citizen Couthon's ego, ushered it into the public eye and placed it uncomfortably beneath a Damoclean sword.

"Does not Citizen Couthon believe in 'Liberté, Égalité and Fraternité?'" Pinel inquired.

The magistrate strenuously affirmed his be-

lief, for it was upon his support of this triad of freedoms that Couthon had established his reputation.

Pinning him with righteous indignation, Pinel then inquired why these rights were not permitted citizens in Bicêtre and Salpêtrière. Couthon wiggled his deformed body uncomfortably, for Pinel, intent upon his subject, was boldly exposing a point that was political dynamite. And with all reticence and shyness gone, Pinel fought for his patients.

"These people are citizens of France, Monsieur Couthon," he cried, "deserving kindness and reasonable liberty—yet they suffer in conditions far worse than those formerly experienced by Frenchmen under the thumbs of the Aristocrats."

The trio, confused, conferred among themselves. Ending their whispered discussion, they tried to turn the conversation to the subject of Pinel's alleged Royalist sympathies.

But Pinel stood firm, realizing he had sliced at Couthon's ego, knowing Couthon would not permit any questionable remarks to remain unanswered if they attacked his highly touted stand on equality for all men.

### Visit

"I will come to Bicêtre and see for myself," Couthon finally decided. "But Citizen," he remarked as an afterthought, "if thou has deceived us and concealed enemies of the people among thy madmen, woe to thee!"

Early the following morning, Couthon limped through the gates of Bicêtre. Hobbling into the dismal, humid darkness, trying to maintain his balance as his shoes slipped on the filth beneath his feet, flinching from the noise and attempts at physical violence by the inmates, he hurriedly finished his tour.

Ill and shaken, Couthon lurched into the fresh air of the prison exit. Turning to Pinel, he said hoarsely, "Citizen, you are crazy to want to unchain such beasts!"

Pinel was numb as Couthon turned a disdainful glance at the misery behind him and limped quickly toward his carriage. Then, Couthon stopped. He turned with a thoughtful

look at Pinel, nodded sardonically. "Do as you will, but your own life will be sacrificed to this false mercy."

### Last Obstacle

As Couthon's carriage rumbled down the cobblestone streets, it took with it the last obstacle to Pinel's plans. Enlisting Pussin's help he began combing the patient list. He made a careful selection of those he felt could be safely released from their chains. When he finished, he had accumulated more than 50 names.

Pinel was not an incompetent do-gooder. He had no intention of risking his program because of inadequate preparation. To circumvent trouble, he ordered twelve straight waist coats prepared, each reaching below the knees. Long sleeves permitted the arms to be tied around the chest if restraint became necessary. From his patient list he chose a dozen men. Then, accompanied by a retinue of keepers and interested personnel, he descended into the dungeon and approached his first candidate.

It was difficult to see the miserable creature chained in the dimly lighted cell. Once he had been a proud English Captain, but years of incarceration and mistreatment had caused him to become sullen and withdrawn. On the few occasions he was heard to speak, he sounded irrational. Because he had killed a keeper, undoubtedly with provocation, he was considered a maximum security patient; from the day of the keeper's death he had been ignored as much as possible.

### Too Afraid

As spectators and guards crowded around, holding their torches high, Pinel carefully approached the captain. Holding his attention with quiet conversation, the doctor tried to dispel apprehension when the patient appeared receptive, Pinel explained the waist coat and offered him freedom from his chains in exchange for a promise of good behavior.

It was obvious to observers that the captain was trying to understand but such a torrent of thoughts must have collided with each other

in the tormented man's mind, that there was utter silence for a long minute. Finally, the captain's lips opened and his seldom used voice cracked from the darkness.

"You're . . . laughing at me! You're too . . . too . . . much afraid of . . . of me to give me freedom!"

The captain sank against the wall. No sound was made by Pinel. In a moment, perhaps sparked by a small flame of hope, the captain slowly regained his feet and looked into Pinel's stern but sympathetic eyes. He must have sensed the presence of an honest desire to help. With slow deliberation, he nodded his leonine head.

"I will promise," he said.

But the effort of standing had been too much. He trembled and fell to the floor, settling among the chains which had bound him for over 40 years.

### **Rehabilitation**

Pinel ordered his keepers to help him. Quickly they entered the cell and cast loose his chains. Helping him to stand, they fitted him with the waist coat and slowly helped him out into the courtyard. Forty years ago, he had known the blueness of the sky, then its beauty had slowly dissolved into a memory. Now, as he neared the exit, he could feel cool, fresh air as it blew against his face. A few steps farther and the long forgotten sky appeared before his sensitive eyes. Tottering about he touched, almost unbelievably, the bark of the courtyard trees. Bending, he inhaled the intoxicating scent of growing flowers. His eyes welled with tears.

"Oh," he cried, "how beautiful!"

He was taken to a clean cell equipped with a fresh straw mat.

Within two years this "hopeless" patient was discharged, and dozens of others had been given the same course of rehabilitation.

Under a program of kindness and understanding and minimal force, the most disturbed became manageable. Pinel's success soon brought him the position of Professor of Internal Pathology and Director at Salpêtrière,

second of Paris' major asylum-prisons.

Many were unsympathetic toward Pinel's program. Some were violently opposed. One evening, some years after Pinel had begun his work, he was accosted in a narrow street leading to Bicêtre. The attempt to murder him might have succeeded had it not been for the intervention of a tall, muscular man whose military bearing and tactical ability soon dispersed the terrorists. He conducted Pinel to the safety of the hospital, pausing to look at the courtyard where, not too long ago, he had renewed his acquaintance with the sky. He watched, reminiscing, as the gates swung slowly shut, then quietly disappeared into the dusk of the Paris evening.

### **Teaching**

Pinel reorganized his institutions and began teaching rounds. Physicians flocked to hear him. One of these was Esquirol who, under Pinel's influence, later developed a system of institutions which placed France in a position of leadership in psychiatric therapy.

Pinel was recognized as an outstanding clinician. For twenty years he was one of the most prominent faculty members of Paris' École de Médecine.

His interests were not limited to psychiatry, however, for even before he had begun his work with the insane he had become a highly esteemed nosographer with a particular interest in pathology. In 1798 he had published a two volume work *Nosographie Philosophique*, in which he attempted to align medicine with natural science. He hoped to assign diseases to various classes, orders and genera, trying to demonstrate that specific tissues were subject to certain disease. Although his investigations contained error he inspired his students to pursue the subject further.

In 1801 Pinel finished his *Traité Médico-Philosophie sur L'Aliénation Mentale ou la Manie* in which he discussed the origins of mental disease, showing that many problems were secondary to pathological changes in the brain.

A significant number of his ideas are

still accepted and his methods of therapy have formed the basis for many current concepts in psychiatric treatment.

Unfortunately, the great are not immune to the workings of petty politicians. In Pinel's later years, the faculty at the Ecole de Médecine was reorganized, and senior professors were quietly promoted to ineffective honorary positions. Pinel did not try to cope with this new trend. Snubbed by junior faculty associates he spent much of his time visiting the Bicêtre and Salpêtrière. It was at Salpêtrière on October 26, 1826, that Pinel died at the age of 81.

Even in death he was ignored by the Paris clinical school's faculty. It is doubtful, however, if there would have been room for them in the funeral cortege which followed the body of Phillippe Pinel to its resting place in Pere La Chaise. A sea of sorrowful, appreciative faces, many ex-patients from Salpêtrière and Bicêtre, observed the final rites. Representa-

tives from the Institute of the Academy of Medicine and the hospital-prisons, where Pinel had labored so effectively, pronounced his last eulogy.

The Ecole de Médecine's faculty might never have been represented had it not been for Jean Cruvielhier. Standing half hidden among the crowd, this prominent anatomist waited until the others had finished. Then stepping respectfully to the graveside he spoke as a representative of the Paris faculty expressing sorrow at the loss of this benefactor and an appreciation for his monumental work.

The clouded skies of a new France looked down upon the quiet congregation of Pinel's former patients, fellow physicians and psychiatric assistants. Respectfully they attended this final resting place of a man singularly distinguished: in an era when most men were too preoccupied with their own affairs to be kind to one another, Dr. Phillippe Pinel found time for compassion.

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#### POSTSCRIPT

*"This man was addicted to moanin',  
Confusion, edema, and groanin',  
Intestinal rushes,  
Great tricolored blushes,  
And died from too much serotonin."*

WILLIAM B. BEAN AND DAVID FUNK  
*The Vasculocardiac Syndrome of Metastatic Carcinoid*  
*A.M.A. Arch. of Int. Med., February 1959*

# A GUIDE for our readers

The conventions of the presentation of advertising material on pharmaceuticals are related to certain ethical and practical considerations. This guide should be of help to all our readers in an understanding of the advertising material contained herein. Unless it is stated to the contrary:

All illustrations of physicians and patients are dramatizations utilizing models and not specific physicians or actual patients. The ethical and other considerations for this are obvious.

Illustrative material such as dummy prescription blanks, hospital charts, calling cards, memos, etc., are presented as dramatizations.

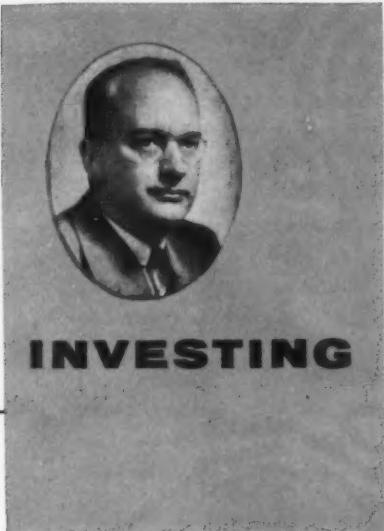
Composite case histories, drawings and/or photomicrographs are often presented to convey typical clinical indications but unless stated to the contrary are constructed as illustrative cases or situations.

Physical limitations of space in journal advertising make the presentation of all relevant data impractical; therefore, it is suggested that for suitable background on dosage indications and contraindications the standard package insert or more extensive background data be consulted.

The acceptance of material for advertising is based upon several criteria; for example, in respect to safety, all new drugs are required to correspond with the accepted Food and Drug application.

It is suggested that any difference of opinion of individual physicians with any advertisements be called to the attention of the editor, with a duplicate copy of the letter to the pharmaceutical house whose advertisement is the subject of the letter.

THE PUBLISHERS



## INVESTING

## FOR THE SUCCESSFUL PHYSICIAN

Prepared especially for Medical Times by C. Norman Stabler, market analyst of the New York Herald Tribune.

### GOLD AND INTEREST RATES

The economic recovery in Europe and in other continents to a lesser extent, has one of its manifestations in foreign countries developing their industry to the point where they can export to us a growing volume of their manufactured goods. The result is that our trade balance becomes less favorable on balance, meaning we import more goods, measured in dollars.

This in turn has resulted in our losing a portion of our preponderantly large gold reserve. (We still own \$19,478,000,000 of the metal, or about 49 per cent of the world's total.)

Those who worry that we are losing it too fast say that foreigners now own sufficient dollar securities so that if they sold them, and bought gold, we wouldn't have any left. Technically speaking they could not buy our gold directly, any more than can a United States citizen, but they could sell dollar securities and turn the dollars in to their banks for their own local currencies and then the foreign banks, in turn, could buy gold from us, at \$35 an ounce.

There is no more chance of that happening than there is that all of us will rush to our banks at one and the same time and draw out our deposits. We need a balance in the bank in order to do business. Foreign central banks need international balances as well.

Moreover these foreign banks and foreign investors are quite satisfied with the interest

rates they obtain here now. If our interest rates should drop, it is reasonable to assume a certain amount of liquidation of our securities would take place, as an investor goes where he can get the best return.

The Editors of "The Journal of Commerce" recently pondered the problem in an effort to decide what would happen in the event this country suffers a major gold loss.

"The effects of a gold loss would be mainly psychological," they assert. "But psychology leads to human reaction, and the psychological impact of a loss of gold in this country could easily end up hurting our international trade and service industries, while also bringing a flight from the dollar into goods at home too."

The "Journal of Commerce" labels the fact that foreigners are willing to invest in our high-



interest securities as a silver lining in the cloud of the deficit in our balance of payments.

One thing that isn't mentioned is the fact that when the U.S. government sells securities to its nationals it may pay a high interest rate. But as the interest income goes into our pockets, the

tax collector's hand is there to grab up to half of it for taxes since the interest on U.S. government bonds is taxable at regular rates.

When foreigners get interest on U.S. bonds they are immune to our tax collectors, so it costs us more to sell bonds to foreigners than it does to sell them to our nationals who have to shell out fat taxes.

One thing about this potential danger on gold is that there is no precedent for it. No one knows just what it would mean to take a severe loss of gold. Foreign nations have gone through that process many times without dying.

They have become strong with our help and

what not long ago was a dollar gap—a big dollar shortage for them—is now a big dollar surplus.

The big trouble that the experts say is being fixed gradually is our continuing deficit in our balance of payments abroad. Once this is plugged up the situation may reverse and we may get gold back and foreigners may have to reduce their dollar holdings.

The thing can move in either direction. And the experts note that this country doesn't want foreign nations to run short of dollars and lose the strong economic position they have built with our aid.

#### SEES \$2,000,000,000 GOLD AND DOLLAR LOSS



An economist who believes the United States this year will enjoy a high level of exports but still may lose two billion dollars in gold and dollar balances, is Walter H. Diamond, a well-known international trade consultant and former economist for McGraw-Hill International Corporation.

He stated his reasons, with figures, at a meeting last month at the Houston, Texas, World Trade Association.

He told the Texas foreign traders he expects commercial shipments overseas will jump 10 per cent from last year's figure of \$16.8 billion despite the political unrest in Latin America and the distinct possibility of economic warfare between Europe's two trading blocs.

"Total imported goods will increase about 3 percent from \$15.6 billion in 1959 to \$16 billion. This means that the U.S. favorable trade balance will rebound to \$2.5 billion from the nine-year low of \$1.2 billion touched in 1959." However, Mr. Diamond declared this will be far short of the \$4.5 billion export surplus required to offset the high military, foreign aid, tourist and private investment outlays responsible for America's balance of payments deficit. Thus the U.S. will be faced with another gold and dollar loss of \$2 billion in 1960, the speaker predicted.

Special circumstances unlike those of recent years will force 1960 U.S. commercial exports up to the all-time high second only to the 1957 record which was an aftermath of the Suez war, according to the noted trade expert. "An advance in the export payment rate will bolster overseas cotton sales while the severe drought which struck Europe in 1959 will maintain the unusually high rate of corn, soybeans and feed grain exports."

It was also pointed out that the advent of the jet age will be responsible for nearly \$1 billion in aircraft deliveries to foreign commercial lines and that the end of the U. S. steel strike will reverse the decline in shipments of finished manufactures so that a \$1 billion increase in exports is assured.

In addition to these abnormal factors, Mr. Diamond said removal of import discrimination against dollar goods and greater availability of capital for financing exports are certain to spur America's sales abroad. "Eleven European, African and Far Eastern countries either partially or completely abolished quotas and other restrictions on American goods within the past few months."

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The information set forth herein was obtained from sources which we believe reliable, but we do not guarantee its accuracy. Neither the information nor any opinion expressed constitutes either a recommendation or a solicitation by the publisher or the authors for the purchase or sale of any securities or commodities.

# PMB

"PREMARIN" WITH MEPROBAMATE

# 200

## FOR PROVEN MENOPAUSAL BENEFITS

The vast majority of menopausal women, especially on the first visit, are nervous, apprehensive, and tense. PMB-200 or PMB-400 gives your patient the advantage of extra relief from anxiety and tension, particularly when the patient is "high strung," under prolonged emotional stress, or when psychogenic manifestations are acute. Proven menopausal benefits are confirmed by the wide clinical acceptance of "Premarin," specifically for the relief of hot flushes and other symptoms of estrogen deficiency, together with the well established tranquilizing efficacy of meprobamate.



Two potencies that will meet the needs of your patients:  
**PMB-200** — Each tablet contains conjugated estrogens equine ("Premarin") 0.4 mg., and 200 mg. of meprobamate. When greater tranquilization is necessary you can prescribe  
**PMB-400** — Each tablet contains conjugated estrogens equine ("Premarin") 0.4 mg., and 400 mg. of meprobamate. Both potencies are available in bottles of 60 and 500.

Ayerst Laboratories New York 16, N.Y.  
Montreal, Canada

Meprobamate, licensed under U.S. Pat. No. 2,724,720

5916

ORALLY EFFECTIVE THERAPY  
OF DERMATOMYCOSES

# GRIFULV

PENETRATES THE KERATIN BARRIER  
FROM THE INSIDE



Griseofulvin

Since topical agents are unable to reach pathogenic fungi lodged deep in the keratin of the skin, hair or nails, a systemic therapy for superficial mycoses has been a long-sought therapeutic goal. **GRIFULVIN** dramatically achieves that goal.

Absorbed from the gastrointestinal tract, **GRIFULVIN** is deposited in the keratin of the skin, hair or nails in fungistatic amounts. Organisms are thus held in check while the keratin containing viable but inactive fungi is gradually exfoliated and replaced by noninfected tissue.

- Tinea corporis usually clears in 2 to 4 weeks; itching stops in 3 to 5 days.
- Tinea pedis improves in 1 to 2 weeks; complete clearing may require 3 to 6 weeks.
- Tinea capitis improves in 2 to 3 weeks; is usually cured in 3 to 5 weeks.
- Onychomycosis (tinea unguium) — fingernails clear in 3 to 4 months; new normal growth is seen earlier; toenails require longer treatment.
- Oral **GRIFULVIN** appears to have a very low level of toxicity.

Literature concerning method of administration and dosage is available upon request.

*Supplied:* 250 mg. scored tablets, colored aquamarine, imprinted McNEIL, bottles of 16 and 100.

**McNEIL**

McNeil Laboratories, Inc • Philadelphia 32, Pa.

## HOUSING STARTS IN 1960



At the start of this year there was great unanimity of opinion among economists and business men that 1960, and in fact the entire decade, will bring great prosperity to the United States. With almost the same degree of unanimity these forecasters said they looked for a decline in housing starts, largely because they believe the present high rates for money will discourage many prospective home builders.

One industrialist who takes the opposite view with respect to this particular index of business is David O'D Kennedy, president of Kentile, Inc. He believes that when the 1959 figures become available they will show a new record in the matter of dollar volume of new housing and that this year larger and better houses will be a continuing factor in keeping the dollar level high.

Factors on which he bases his optimism include:

- Demand for new housing will be increased by continued general prosperity.

- Quality housing will gain a greater share of the market.
- The spectacular rise in population will create new housing needs.

"The level of building in this country since World War II, while high, has by no means satisfied the market," he says.

He believes the credit pinch is approaching its peak.

He notes that higher interest rates did not place a severe drag on the market last year, and he doubts if they will in 1960.

He holds the mass market no longer means a tasteless market in this country. The family segment with \$5,000 yearly earnings, which will buy a home with a maximum \$13,000 mortgage, is demanding new housing, he says.

"Americans are marrying younger than ever, men at 22 and women at 20. And the Census Bureau gives obvious reasons—increased economic prosperity and greater job security.

"Marriages in the country were up 3.6 per cent for the first nine months last year over the corresponding period in 1958. During the first nine months of 1959 an estimated 3,188,000 live births were registered—higher than the past record for the period, which was in 1957."

## IS THIS TO BE A YEAR OF STRIKES?

Secretary of Labor James P. Mitchell recently characterized 1959 as the worst year for industrial peace since strife-ridden 1946, in terms of idleness due to strikes. Are we to see worse in 1960?

Joseph F. Finnegan, Federal Mediator in the steel strike of 1959-'60, sees a stormy year ahead.

"There is no sign of alleviation of the tough attitudes that have characterized negotiations during most of last year," Mr. Finnegan said. "There seems to be plenty of grief ahead."

Mr. Mitchell, in a year-end statement, predicted that 1960 would be the best year in history for individual workers. Employment and wages should increase while joblessness declines, he said.

Mr. Finnegan based his forecast of labor

strife partly on figures showing that 122 major contracts affecting 1,571,000 workers will expire this year. This total does not include those involved in the steel controversy or another 800,000 railroad workers who may stage a late spring walkout.

The biggest new negotiations will take place in the aircraft and missile industry. Contracts covering more than a half-million workers expire in the second quarter.

"Prophecy is a dangerous thing—and I sure hope I'm wrong," said Mr. Finnegan. "But we're gearing up for a very strenuous bargaining year."

"This doesn't necessarily mean more stoppages but there seems to be no slacking in the aggressive action by management to recapture managerial prerogatives they feel have been lost in recent years."

**RELIEVE  
INFLAMMATION  
STOP  
PRURITUS  
REDUCE  
EXUDATION  
CONTROL  
INFECTION  
STOP PAIN**

**NEW  
for  
patient  
comfort**



A buffered solution with pH adjusted to conform to the slightly acid condition of the normal skin in the external ear canal.

Does not obscure anatomic landmarks during Otoscopy.

Virtually nonsensitizing and nonirritating.

Sterile ear solution . . . with a cellophane wrapped sterile dropper.

Each cc. of OTOBIONE contains:  
anti-inflammatory Prednisolone acetate, 5 mg.,  
anti-bacterial Neomycin (from sulfate) 3.5 mg.,  
and anti-fungal Sodium propionate 50 mg.  
Supplied: In 5 cc. bottles.

# OTOBIONE®

in ear infections and seasonal ear complaints

WHITE LABORATORIES INC.  
KENILWORTH, NEW JERSEY

## DRUG CHAINS AND AUTOMATION

Complex operating programs have made drug chains explore the benefits of automation, according to "Chain Store Age." A few chains have already installed giant computing machines and are evaluating the results, it states. Others are taking initial stores and are using smaller, easier handling equipment.

For most drug chains, the big lure of automation is tighter inventory control. The average drug chain carries 20,000 or more items, and faces perennial problems of keeping stock at correct levels. Computers, with their split-second calculating abilities and stored "memories" enable drug chains to keep precise tabs on this tremendous range of merchandise.

To date, four drug chains have installed computers, including Gray, Cleveland; Liggett, Stamford, Conn.; Sun Ray, Philadelphia, and Katz, Kansas City. Gray, which was the first to

"go on the air" with a computer, can also point to the most dramatic results. According to Gray's treasurer and vice president, Lloyd C. Douglass, when Gray first installed its computer, the chain was servicing 87 stores. Today, with 109 stores, the chain is operating with substantially less inventory than it needed for 87 stores.

"Chain Store Age" lists other potent arguments for automation. The big "brains" not only streamline inventory; they can maintain minimum stock levels and prevent "outs" of essential merchandise. Machines can reduce paper work and clerical payroll. Dull, time consuming routines can be handled with tremendous speed at the touch of a few buttons. Finally, there is the intangible morale and prestige factor of having one of the sleek, super-efficient machines "in the house."

## SPLITS POPULAR

Most stockholders like stock splits. They reduce the selling price of the new shares, thus making them more marketable, and the split carries with it the expectation that eventually the cash dividend will be improved.

An example is last year's split of American Telephone, which paid \$9 a share on its old stock. This issue was split three-for-one and the new shares paid a dividend of \$3.30, thus equivalent to \$9.90 on the old stock. Directors are not required to increase a dividend but there is usually a suspicion they will.

Last year was a record one for splits in the major corporations. Of the stocks listed on the New York Stock Exchange there were 94 that split on a two-for-one or better basis. The previous record was 88, in 1956. In 1929 there were only 38.

Then there was a drought while we went through the big bear market of the early 1930's. In 1946 split-ups ran up a total of 74. In 1955 the number ran up to 73.

A stock split is simply addition of more pieces of stock to the same capitalization. If a corporation has 1,000,000 shares outstanding



and splits the stock two-for-one, it boosts its outstanding stock to 2,000,000. It's the same stock, in more pieces. No matter whether the stock is split up or down, the holders' equities remain the same.

Companies benefit in several ways from stock splits.

In the first place, the lower price the stock brings after the split may attract additional stockholders for the company which is something corporations welcome these days.

The split stock even if the dividend is raised, brings a smaller individual dividend and makes it look smaller on the whole to the politicians who want to investigate everything that's big.

Dr. Douglas H. Bellemore and Lillian H. Blucher have made a detailed study of stock splits in the post-war years and their findings

"Just a little  
case of cystitis'  
may actually  
have already  
involved the  
kidney parenchyma  
before the  
bladder  
became infected."

"The first evidence of inflammatory  
disease of kidney or prostate  
often is vesical irritability."<sup>1</sup>

WHEN THE SYMPTOM IS CYSTITIS

# FURADANTIN®

Brand of nitrofurantoin

for rapid control of infection throughout the G. U. system

Rapid bactericidal action against a wide range of gram-positive and gram-negative bacteria including organisms such as staphylococci, Proteus and certain strains of Pseudomonas, resistant to other agents

- actively excreted by the tubule cells in addition to glomerular filtration
- negligible development of bacterial resistance after 7 years of extensive clinical use
- excellent tolerance—nontoxic to kidneys, liver and blood-forming organs
- safe for long-term administration

AVERAGE FURADANTIN ADULT DOSAGE: 100 mg. q.i.d. with meals and with food or milk on retiring. Supplied: Tablets, 50 and 100 mg.; Oral Suspension, 25 mg. per 5 cc. tsp.

REFERENCES: 1. Editorial: J.M.A. Georgia 46:433, 1957. 2. Colby, F. H.: Essential Urology, Baltimore, The Williams & Wilkins Co., 1953, p. 330.

NITROFURANS—A UNIQUE class of antimicrobials—neither antibiotics nor sulfonamides  
EATON LABORATORIES, NORWICH, NEW YORK

## GUIDE FOR INVESTORS

*Based on recommendations of the Securities and Exchange Commission in cooperation with the New York Stock Exchange, American Stock Exchange, National Association of Securities Dealers and others.*

1. Think before buying, guard against all high pressure sales.
2. Beware of promises of quick spectacular price rises.
3. Be sure you understand the risk of loss as well as prospect of gain.
4. Get the facts—do not buy on tips or rumors.
5. Give at least as much thought when purchasing securities as you would when acquiring any valuable property.
6. Be skeptical of securities offered on the telephone from any firm or salesman you do not know.
7. Request the person offering securities over the phone to mail you written information about the corporation, its operations, net profit, management, financial position and future prospects.

are published in the "Analysts Journal."

They have delved into all phases of stock splits. They find investor reaction to a split-up normally is registered in the market price within a few days following the public announcement.

"The trading day, eight weeks after the announcement date, was chosen for comparison of prices after splitting. Again, it is considered that all benefits anticipated as a result of the split, such as higher dividends, are usually fully discounted by the market at this time, even though the split-up may not yet have become effective."

Despite the fact that the stock split does nothing in the way of changing stockholders' equity, the authors find that split shares normally out-perform the rest of the market list for several months before and after a split announcement.

Split rumors, they assert, usually attract much attention from speculators "since potential split-ups often provide opportunities for wide percentage gains within a short time."

"Profit-taking by speculators after split-ups have been formally announced is probably one of the reasons for the slight sell-off commonly experienced by stocks at this stage."

The authors—Douglass, an economist, and Miss Blucher, a security analyst—conclude it is their belief that by making long-range investments in stocks of good quality which are expected to split, "investors may realize the full benefits of any sound investment program, plus the advantages of the additional appreciation potential characteristic of such stocks."

"Thus for those who are willing to investigate their profitable possibilities, for true investment purposes, stock split-ups could play an increasingly significant role in successful portfolio management."

## AUTOMATED POST OFFICES

For many of us the most direct connection we have with automation is the laundromat or some other mechanized equipment that can perform a familiar public service. The same is coming to the post office, reports Postmaster General Arthur E. Summerfield, writing in Indiana

WORKS FROM THE INSIDE OUT



*Treatment  
for the  
sinus symptom  
complex*

# URSINUS<sup>TM</sup>

Calurin® plus Triaminic®

*In acute and chronic sinusitis*

... a logical, clinically superior formulation of

## *Calurin*

... the new, freely soluble, better tolerated  
neutral salt of aspirin

## *relieves pain*

... fast and effectively



## *Triaminic*

... the leading oral nasal decongestant ...  
safer and more effective than topical medication<sup>1,2</sup>



## *relieves pressure*

... within minutes

### *Ursinus Inlay-Tabs™ contain:*

**CALURIN** (stable, freely soluble  
calcium acetysalicylate carbamide)  
equiv. to acetysalicylic acid.....(5 gr.) 300 mg.

**TRIAMINIC** ..... 50 mg.  
(phenylpropanolamine HCl, 25 mg.,  
pheniramine maleate, 12.5 mg., and  
pyrilamine maleate, 12.5 mg.)

**INDICATIONS:** Acute, subacute and chronic sinusitis.  
Relief of symptoms accompanying the common cold.

**DOSAGE:** Adult: 1 or 2 URSINUS Inlay-Tabs  
every 4 to 6 hours. Children 6 to 12:  $\frac{1}{2}$  to  
1 URSINUS Inlay-Tab every 6 hours.

**SUPPLY:** Bottles of 100 URSINUS Inlay-Tabs.  
URSINUS is available on prescription only.

1. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.
2. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957.

**SMITH-DORSEY • Lincoln, Nebraska**  
a division of *The Wander Company*

University's, "Current Business."

He predicts a completely automated postal substation that will operate around the clock. It will include a change-making machine that vends stamps, stamped envelopes, postal cards, paper and stamp booklets and another that issues money orders, and a third machine to weigh packages and apply the necessary postage and insurance.

All of these devices, Summerfield continued,

have been constructed on a pilot model basis and were shown in a recent "parade of postal progress" exhibition in Washington.

Besides the physical speedup at the deposit point, the public can look forward to more effective transportation of mail.

With greater use of jet airline service, Summerfield predicted a next-day delivery of letters between any two points in the United States by 1970.



Americans have more than half the world's telephones but we are not the greatest talkers. Figures of a year ago compiled by American Telephone & Telegraph Company show that of the world's 124,800,000 telephones, 66,645,000, or 53.4 per cent, are in the United States.

We average 472 calls a year, and Canada tops us with an average of 511. Our two new states, Alaska and Hawaii, are even more talkative than the Canadians, averaging 609 and 536 respectively.

Next to the United States in number of phones are United Kingdom, 7,525,000; Canada, 5,123,000; and West Germany, 5,090,000. Russia is estimated to have 3,700,000.

American Telephone users can call 130 other countries or areas and can be connected with nearly 98 per cent of all the phones in the world.

Among cities, Washington, D.C. ranks first in density, with 71 telephones per 100 population. New York is first in total number of phones, with 4,289,600. That figure also tops most nations, with only the United Kingdom, Canada, West Germany and Japan having more.

#### WHAT COLOR BREAD MY DEAR?

Bread in bright pink, blue and green slices is likely to become a huge seller across the United States in the next year, Monsanto Chemical Co. says.

Invented in Britain, the bread coloring al-

ready has been introduced in the United States by Humphrey Bakery Co. of Los Angeles. The colors are vegetable dyes. Experience in Britain showed children were so attracted by the brightly colored bread that sales went up.

#### THE FIFTY FAVORITES

What stocks are most favored by the men who invest money for the big funds? There is no assurance that their choices are always the best, but at least they are professionals in the investment business. As a consequence other investors examine their choices carefully.

A quarterly compilation of the fifty stocks most favored by the portfolio managers of 318 investment companies, including 71 closed-end companies along with mutual funds, with total assets in excess of \$23,000,000,000, is prepared

by the firm of Vickers Associates, Inc.

The latest one covers the situation as of the close September 30, 1959. The year-end compilation is not yet available.

It will be seen from the table on page 122a that newcomers in the September list included Aluminum Company of America and Parke Davis and Co.

Displaced from the first fifty, in order to make way for the newcomers, were Caterpillar Trac-

*Continued on page 126a*

# PROVEN EFFECTIVE FOR THE TENSE AND NERVOUS PATIENT



"There is perhaps no other drug introduced in recent years which has had such a broad spectrum of clinical application as has meprobamate.\* As a tranquilizer, without an autonomic component in its action, and with a minimum of side effects, meprobamate has met a clinical need in anxiety states and many organic diseases with a tension component."

Krantz, J. C., Jr.: The restless patient - A psychologic and pharmacologic viewpoint.  
Current M. Digest 25:68, Feb. 1958.

\* **Miltown®**  
*the original meprobamate, discovered and introduced by*  
 WALLACE LABORATORIES, New Brunswick, N. J.

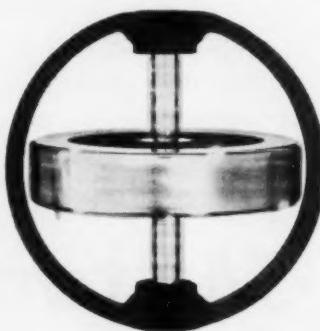
in respiratory allergies...

*unsurpassed for total  
corticosteroid benefits*

# AriS

*Substantiated by published reports of leading clinicians*

- effective control  
of allergic  
and inflammatory  
symptoms<sup>1-8</sup>



- minimal disturbance  
of the patient's  
chemical and psychic  
balance<sup>1, 4, 5, 8-18</sup>

# to cort®

Triamcinolone LEDERLE

*At the recommended antiallergic and anti-inflammatory dosage levels, ARISTOCORT means:*

- freedom from salt and water retention
- virtual freedom from potassium depletion
- negligible calcium depletion
- euphoria and depression rare
- no voracious appetite—no excessive weight gain
- low incidence of peptic ulcer
- low incidence of osteoporosis with compression fracture

**Precautions:** With ARISTOCORT all traditional precautions to corticosteroid therapy should be observed. Dosage should always be carefully adjusted to the smallest amount which will suppress symptoms.

After patients have been on steroids for prolonged periods, discontinuance must be carried out gradually over a period of as much as several weeks.

**Supplied:** 1 mg. scored tablets (yellow); 2 mg. scored tablets (pink); 4 mg. scored tablets (white); 16 mg. scored tablets (white).

**Diacetate Parenteral (for intra-articular and intrasynovial injection).** Vials of 5 cc. (25 mg./cc.).

**References:** 1. Feinberg, S. M.; Feinberg, A. R., and Fisherman, E.W.: *J.A.M.A.* 167:58 (May 3) 1958. 2. Epstein, J. I., and Sherwood, H.: *Conn. Med.* 22:222 (Dec.) 1958. 3. Friedlaender, S., and Friedlaender, A. S.: *Antibiotic Med. & Clin. Ther.* 5:315 (May) 1958. 4. Segal, M. S., and Duvencu, J.: *Bull. Tufts N.E. Medical Center* 4:71 (April-June) 1958. 5. Segal M. S.: Report to the A.M.A. Council on Drugs. *J.A.M.A.* 169:1063 (March 7) 1958. 6. Sherwood, H., and Cooke, R. A.: *J. Allergy* 28:97 (Mar.) 1958. 7. Duke, C. J., and Oviedo, R.: *Antibiotic Med. & Clin. Ther.* 5:710 (Dec.) 1958. 8. McGavack, T. H.: *Clin. Med.* (June) 1959. 9. Freyberg, R. H.; Berntsen, C. A., and Hellman, L.: *Arthritis and Rheumatism* 1:215 (June) 1958. 10. Hartung, E. F.: *J.A.M.A.* 167:973 (June 21) 1958. 11. Zuckner, J.; Ramsey, R. H.; Caciolo, C., and Gantner, G. E.: *Ann. Rheum. Dis.* 17:398 (Dec.) 1958. 12. Appel, B.; Tye, M. J., and Leibsohn, E.: *Antibiotic Med. & Clin. Ther.* 5:716 (Dec.) 1958. 13. Kalz, F.: *Canad. M.A.J.* 79:400 (Sept.) 1958. 14. Mullins, J. F., and Wilson, C. J.: *Texas J. Med.* 54:648 (Sept.) 1958. 15. Shelley, W. B.; Haran, J. S., and Pillsbury, D. M.: *J.A.M.A.* 167:959 (June 21) 1958. 16. DuBois, E. L.: *J.A.M.A.* 167:1590 (July 26) 1958. 17. McGavack, T. H.; Kao, K. T.; Leske, D. A.; Bauer, H. G., and Berger, H. E.: *Am. J. M. Sc.* 236:270 (Dec.) 1958. 18. Council on Drugs: *J.A.M.A.* 169:257 (January 17) 1959.



LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, N.Y.

**THE FAVORITE FIFTY**

	RANK BY DOLLAR VALUE						
	12/31/58	6/30/59	9/30/59	\$ VALUE (MILLIONS)	NO. OF INV. COS. HOLDING	NUMBER OF SHARES HELD	
INTERNATIONAL BUSINESS MACHINES CORP.	1	1	1	328	86	796,000	4.36
UNITED STATES STEEL CORPORATION	2	2	2	255	85	2,541,200	4.71
TEXACO, INC.	3	3	3	206	93	2,676,900	4.58
GOODYEAR TIRE & RUBBER COMPANY	5	4	4	156	51	1,232,000	11.38
STANDARD OIL COMPANY (NEW JERSEY)	4	5	5	155	107	3,205,800	1.49
DU PONT (E. I.) DE NEMOURS & CO.	14	6	6	155	88	618,900	1.33
GENERAL MOTORS CORPORATION	13	8	7	150	90	2,724,900	0.97
INTERNATIONAL PAPER COMPANY	12	7	8	145	52	1,143,300	8.77
REPUBLIC STEEL CORPORATION	11	9	9	131	63	1,739,400	11.10
BETHLEHEM STEEL CORPORATION	10	10	10	128	61	2,283,400	5.05
GULF OIL CORPORATION	6	11	11	125	72	1,119,700	3.46
GENERAL ELECTRIC CORPORATION	16	12	12	122	79	1,548,000	1.76
ARMCO STEEL CORPORATION	17	14	13	121	55	1,626,100	10.99
FORD MOTOR COMPANY	-	19	14	117	57	1,416,400	2.58
ROYAL DUTCH PETROLEUM COMPANY	8	15	15	115	79	2,774,000	4.05
AMERICAN TELEPHONE & TELEGRAPH CO.	7	13	16	106	67	1,337,200	0.62
STANDARD OIL COMPANY OF CALIFORNIA	9	16	17	100	64	2,034,700	3.22
INTERNAT'L NICKEL CO. OF CANADA, LTD.	27	18	18	98	64	1,054,500	7.23
FIRESTONE TIRE & RUBBER COMPANY	18	17	19	96	33	762,000	8.85
UNION CARBIDE CORPORATION	24	20	20	95	70	685,200	2.28
CONTINENTAL OIL COMPANY	19	21	21	90	57	1,773,100	8.41
REYNOLDS METALS COMPANY	33	23	22	88	36	843,800	7.51
MINNESOTA MINING & MANUFACTURING	28	22	23	83	40	594,400	3.50
WESTINGHOUSE ELECTRIC CORPORATION	-	24	24	82	64	917,100	5.30
MERCK & CO.	20	26	25	81	48	1,039,100	9.82
SOUTHERN COMPANY (THE)	35	28	26	80	48	2,107,300	9.41
ALLIED CHEMICAL CORPORATION	47	34	27	78	45	694,500	6.99
EASTMAN KODAK COMPANY	26	29	28	77	40	891,000	2.32
TEXAS UTILITIES COMPANY	23	30	29	75	47	1,087,400	8.66
RADIO CORPORATION OF AMERICA	44	25	30	74	59	1,293,300	9.22
FLORIDA POWER & LIGHT COMPANY (Fla.)	29	37	31	73	42	1,476,300	11.18
MONSANTO CHEMICAL COMPANY	-	32	32	70	53	1,393,400	6.22
YOUNGSTOWN SHEET & TUBE COMPANY	42	41	33	70	39	518,200	14.93
AMERADA PETROLEUM CORPORATION	15	27	34	69	40	903,300	14.31
SHELL OIL COMPANY	25	42	35	66	37	877,100	2.90
NATIONAL LEAD COMPANY	38	35	36	65	46	569,800	4.89
PFIZER, (CHAS.) & CO., INC.	22	33	37	64	39	1,868,900	11.60
CENTRAL AND SOUTHWEST CORPORATION	31	36	38	64	43	1,077,300	10.47
ALUMINIUM, LTD.	39	48	39	63	55	1,862,500	6.14
GENERAL TELEPHONE & ELECTRONICS	-	43	40	63	44	909,900	4.34
STANDARD OIL COMPANY (INDIANA)	34	38	41	62	51	1,449,200	4.05
UNITED STATES GYPSUM COMPANY	30	40	42	61	28	627,800	7.78
SUPERIOR OIL COMPANY (CALIFORNIA)	21	31	43	61	23	40,400	9.57
LOUISIANA LAND & EXPLORATION	40	46	44	59	36	1,166,700	13.01
ALUMINUM COMPANY OF AMERICA	-	-	45	59	42	542,400	2.58
SOUTHERN RAILWAY COMPANY	37	47	46	58	44	1,080,200	16.69
DOW CHEMICAL CO.	-	49	47	58	51	712,300	2.65
PARKER, DAVIS & CO.	36	-	48	58	29	1,326,600	8.95
DEERE & COMPANY	-	44	49	58	55	1,021,300	15.24
GOODRICH (B. F.) COMPANY	48	45	50	54	42	645,000	7.17

New revitalizing tonic  
brightens  
the second half of life!

# Ritonic®

A sense of frustration and inadequacy, faulty nutrition, waning gonadal function—RITONIC meets all these problems of middle age and senile let-down. The unique combination of RITALIN, the safe central stimulant, with a balanced complement of vitamins, calcium, and hormones acts to renew vitality, re-establish hormonal and anabolic benefits, and improve nutritional status.

"We found Ritonic to be a safe, effective geriatric supplement..."<sup>1</sup> Patients reported "an increase in alertness, vitality and sense of well being."<sup>2</sup>



## PRESCRIBE RITONIC

for your geriatric patients, your middle-aged patients and your postmenopausal patients.

Each Ritonic Capsule contains:

Ritalin® hydrochloride	5 mg.
methyltestosterone	1.25 mg.
ethinyl estradiol	5 micrograms
thiamin (vitamin B <sub>1</sub> )	5 mg.
riboflavin (vitamin B <sub>2</sub> )	1 mg.
pyridoxin (vitamin B <sub>6</sub> )	2 mg.
vitamin B <sub>12</sub> activity	2 micrograms
nicotinamide	25 mg.
dicalcium phosphate	250 mg.

Dosage: One Ritonic Capsule in mid-morning and one in mid-afternoon.

Supplied: Ritonic CAPSULES; bottles of 100.

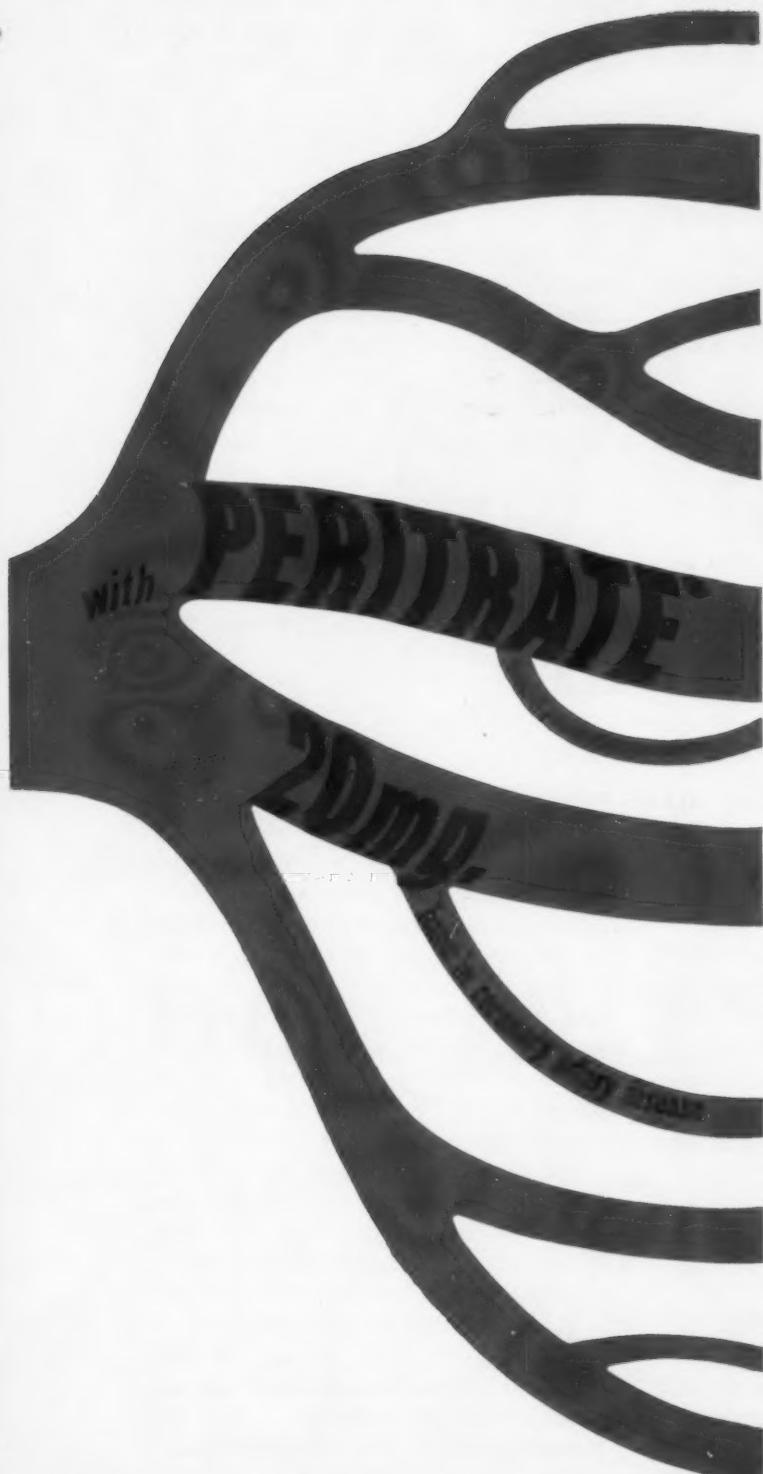
References: 1. Natenson, A. L.: J. Am. Geriatrics Soc. 6:534 (July) 1958.  
2. Bachrach, S.: J. Am. Geriatrics Soc. 7:408 (May) 1959.

RITALIN® hydrochloride (methylphenidate hydrochloride CIBA)

C I B A SUMMIT, N.J.

2/270348

*improve coronary blood flow in angina and postcoronary patients*



**■ *a proven drug*—**

supported by extensive clinical experience during the last ten years

**■ *selective physiologic action*—**

unlike most nitrites, dilates coronary vessels principally, with minimal peripheral effects, so that coronary blood flow is increased with no significant change in blood pressure or pulse rate

**■ *exceptionally safe*—**

safe for prolonged use—essentially free from side effects—tolerance has not been reported—no hypotension, orthostatic or otherwise, has occurred—*so safe, it is used routinely even after a coronary*

**■ *effective in mildest to severest angina pectoris*—**

4 out of 5 patients experience reduced frequency and severity of anginal attacks, increased exercise tolerance, lowered nitroglycerin dependence, improved ECG findings

**■ *ideal in postcoronary convalescence*—**

helps establish and sustain collateral circulation to reduce the extent of myocardial damage, to encourage natural healing and repair, to minimize ensuing anginal attacks

**■ *adaptable prophylaxis*—**

available in several formulations to meet the individual requirements of patients with coronary artery disease: *Peritrate 20 mg.* for basic prophylaxis, *Peritrate with Phenobarbital* for the apprehensive patient, *Peritrate Sustained Action* for convenient 24-hour protection with just 2 tablets daily.



tor and General Public Utilities.

Newcomers get into the list through two influences: either greater purchase of their shares by the investment companies or through an in-

crease in the market value of the shares already held, as the fifty preferences are based on the dollar value of stocks held (See Table which appears on page 122a).

### CHEMISTS REPORT PROGRESS

The chemical industry set a new high record of achievement last year but in conversations with representatives of the industry, we gather it looks for even greater accomplishments this year.

Sales last year came to an estimated \$25,000,000,000, with final figures not yet available. That meant a record high, up \$1,600,000,000 from the 1957 total, which was the previous record year. There was a slip in 1958.

The Manufacturing Chemists' Association reports this figure and some of its members look for 1960 to total sales of \$28,000,000,000, up about \$3,000,000,000 from last year's total.

The Association considers the new record last year as especially significant because it was

established during the steel strike. Steel producers and fabricators—including automobile manufacturers—are among the largest users of chemicals and chemical products.

The 1959 sales of \$25 billion represent a 6.8 per cent increase over the previous record of \$23,418,000,000 set in 1957. The probable rate of profit as per cent of sales, however, is running only 0.8 point over the 1957 rate of 7.6 per cent.

This is thought to reflect the continuing rise in production costs and taxes while chemical prices remained relatively stable as a result of competition.

Chemical industry sales in 1958 were \$23,219,000,000, down slightly because of the recession.



### SMALL MAN'S JUDGMENT

In most cases those who buy stocks in small quantities or through monthly investments are those of moderate means. They set aside a certain number of dollars a month and slowly build their stake in industry. There is a prevailing belief that the small investor is an uninitiated one, and that he is more apt to guess wrong than right.

Such does not appear to be the case if we judge by the record of the stocks most popular with the New York Stock Exchange's Monthly Investment Program.

Under this method of systematic saving, the investor selects his own stock and then agrees to deposit a certain number of dollars toward the purchase of shares in that company. The plan was started in 1954.

Sixteen of the twenty MIP favorites advanced

more than 100 per cent in market price between the beginning of 1954 and the close of the first week in November of 1959. Among the other four, the smallest rise over the six years was 51 per cent.

One MIP favorite—International Business Machines—advanced 735 per cent, from \$48.88 per share in 1954 (price adjusted to present capitalization) to \$408 per share in early November this year.

Gains of striking proportions were also registered in the comparable period for Minnesota Mining & Manufacturing, 416 per cent, from \$28.75 to \$148.25; General Telephone & Electronics, 282 per cent, from \$19.88 to \$76; General Dynamics, 278 per cent, from \$12 to \$44.88; and Sperry Rand, 244 per cent, from \$6.75 to \$23.25. (Prices have been adjusted for stock dividends and splits.)

Ten shares of each of the twenty MIP favorites could have been acquired at the beginning

Still  
in the  
picture  
with...

# NIATRIC™

TABLETS AND ELIXIR

**To add life to years—not merely years to life . . .** Niatric sharpens mental acuity and promotes a return to more normal social and physical activity for your aged patients.

In the Old Age Syndrome . . . Niatric relieves confusion, forgetfulness, irritability, depression and apathy—the penalties of advancing age.

- Niatric improves respiration and cerebral function
- Niatric improves circulation
- Niatric protects capillary integrity
- Niatric prevents brain tissue hypoxia

Niatric contains:	Each Tablet:	5 cc. Elixir:
Pentylenetetrazol	100 mg.	100 mg.
Nicotinic Acid	50 mg.	50 mg.
Ascorbic Acid	100 mg.	100 mg.
Bioflavonoids	100 mg.	-----
Alcohol	-----	15%

Average Dose: 1 tablet or 1 tsp. (5 cc.) t.i.d.

Supply: Tablets, bottles of 100 and 500.  
Elixir, bottles of 1 pint.

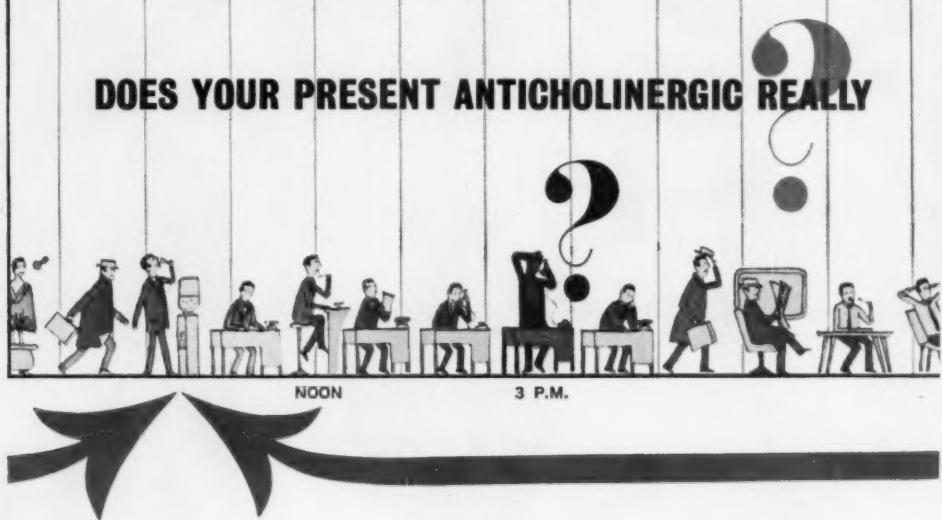
*Send now for samples and literature . . .*



**B. F. ASCHER AND COMPANY, INC.**

*Ethical Medicinals / Kansas City, Missouri*

## DOES YOUR PRESENT ANTICHOLINERGIC REALLY



The test—you might say the acid test—of an anticholinergic is simple: will it protect your patient from hyperacidity around the clock, even while he sleeps. The weakness of t.i.d. or q.i.d. preparations is well recognized; but even some "b.i.d." encapsulations may be unreliable. McHardy, for instance, found a "widely variable duration of action, definitely less than that anticipated" in the "sustained," "delayed," and "gradual release" anticholinergics he studied.<sup>1</sup>

**COMPARE THE DATA ON ENARAX...** the new combination of an inherently long-acting anticholinergic (oxyphencyclimine) and Atarax, the non-secretory tranquilizer. Note the effectiveness of oxyphencyclimine:

### OBSERVE THE OXYPHENCYCLIMINE REPORTS...

**McHardy:** "[Oxyphencyclimine] has proved to be an excellent sustained-action anticholinergic in our study of this agent over a period of eighteen months."<sup>2</sup>

**Kemp:** "...for the majority of patients, one tablet every 12 hours provided adequate control. This characteristic long action...may constitute an advantage of this drug as compared to coated 'long-acting' preparations of other compounds."<sup>3</sup>

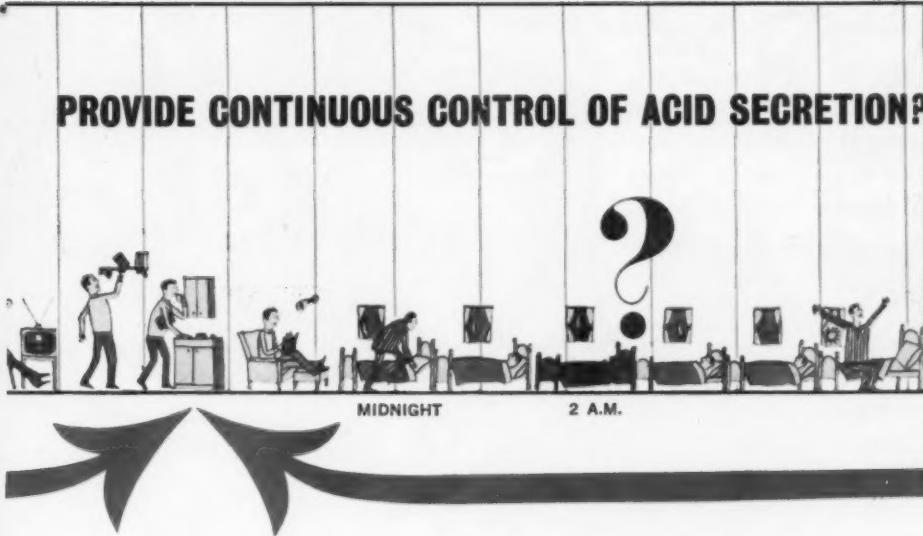
**Add Atarax to this 12-hour anticholinergic.** The resulting combination—ENARAX—now gives relief from emotional stress, in addition to a reduction of spasm and acid. Atarax does not stimulate gastric secretion. No serious adverse clinical reaction has ever been documented with Atarax.

### LOOK AT THE RESULTS WITH ENARAX<sup>4,5</sup>:

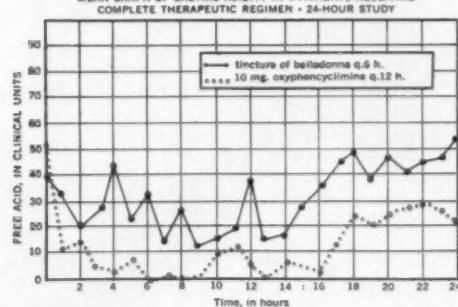
Does the medication you now prescribe assure you of all these benefits? If not, why not put your next patient with peptic ulcer or G.I. dysfunction on therapy that **does**.

**ENARAX®**  
(oxyphencyclimine plus ATARAX®)  
A SENTRY FOR THE G.I. TRACT

## **PROVIDE CONTINUOUS CONTROL OF ACID SECRETION?**



**"Prolonged periods of achlorhydria" after 10 mg. oxyphenacyclimine q. 12 h.**  
**MEAN GRAPH OF GASTRIC ACIDITY IN 4 PATIENTS RECEIVING**



**Clinical Diagnosis:** Peptic Ulcer – Gastritis – Gastroenteritis – Colitis – Functional Bowel Syndrome – Duodenitis – Hiatus Hernia (symptomatic) – Irritable Bowel Syndrome – Pylorospasm – Cardiospasm – Biliary Tract Dysfunctions – and Dysmenorrhea.

**Clinical Results:** Effective in over 92% of cases.

**As for Safety:** "Side reactions were uncommon, usually no more than dryness of the mouth...."<sup>74</sup>

Each ENARAX tablet contains:

**Oxyphencyclimine HCl** ..... 10 mg.  
**Hydroxyzine (ATARAX®)** ..... 25 mg.

**Dosage:** One-half to one tablet twice daily—preferably in the morning and before retiring. The maintenance dose should be adjusted according to therapeutic response. Use with caution in patients with prostatic hypertrophy and with ophthalmological supervision only in glaucoma.

**Supplied:** In bottles of 60 black-and-white scored tablets.

**Supplied:** In bottles of 60 black-and-white scored tablets.  
**References:** 1. McHardy, G., et al.: *J. Louisiana M. Soc.* 111:290 (Aug.) 1959. 2. Steigmann, F.: Study conducted at Cook County Hospital, Chicago, Illinois, in press. 3. Kemp, J. A.: *Antibiotic Med. & Clin. Therapy* 6:534 (Sept.) 1959. 4. Leming, B. H., Jr.: *Clin. Med.* 6:423 (Mar.) 1959. 5. Data in Roerig Medical Department files.



New York 17, N. Y.  
Division, Chas. Pfizer & Co., Inc.  
Science for the World's Well-Being™

SIX-YEAR MARKET PERFORMANCES OF 20 MIP FAVORITES

MIP FAVORITES AS OF 9-25-'59	1954-1959 MARKET PRICE RANGE				6 YR. SPREAD PER SH.**	6 YR. PRICE CHANGE†
	OPEN	HIGH	LOW	LAST*		
GENERAL MOTORS	\$19 <sup>3</sup> / <sub>4</sub> a	\$ 58%	\$ 19 <sup>5</sup> / <sub>8</sub> a	\$ 52%	\$ 39 <sup>1</sup> / <sub>2</sub>	\$+ 32%
GENERAL ELECTRIC	29 <sup>1</sup> / <sub>2</sub> a	84 <sup>1</sup> / <sub>2</sub>	29a	81 <sup>1</sup> / <sub>2</sub>	55 <sup>1</sup> / <sub>2</sub>	+ 52%
DOW CHEMICAL	35 <sup>3</sup> / <sub>8</sub> a	94 <sup>1</sup> / <sub>2</sub>	30 <sup>7</sup> / <sub>8</sub> a	93 <sup>1</sup> / <sub>8</sub>	63 <sup>1</sup> / <sub>2</sub>	+ 57 <sup>1</sup> / <sub>2</sub>
STANDARD OIL OF N. J.	24a	68 <sup>1</sup> / <sub>2</sub>	23 <sup>7</sup> / <sub>8</sub> a	48	44 <sup>1</sup> / <sub>2</sub>	+ 24
TRI-CONTINENTAL CORP.	15 <sup>1</sup> / <sub>2</sub>	42 <sup>1</sup> / <sub>2</sub>	15 <sup>1</sup> / <sub>2</sub>	37 <sup>1</sup> / <sub>2</sub>	27 <sup>1</sup> / <sub>2</sub>	+ 22 <sup>1</sup> / <sub>2</sub>
SPERRY RAND	6 <sup>3</sup> / <sub>4</sub> a	29 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>8</sub> a	23 <sup>1</sup> / <sub>2</sub>	23 <sup>1</sup> / <sub>4</sub>	+ 16 <sup>1</sup> / <sub>2</sub>
PHILLIPS PETROLEUM	26 <sup>3</sup> / <sub>4</sub> a	56 <sup>1</sup> / <sub>2</sub>	26 <sup>3</sup> / <sub>8</sub> a	42	30	+ 15 <sup>1</sup> / <sub>2</sub>
AMERICAN TEL. & TEL.	52a	89	52a	78 <sup>1</sup> / <sub>2</sub>	37	+ 26%
INT'L BUSINESS MACHINES	48 <sup>7</sup> / <sub>8</sub> a	488	48 <sup>7</sup> / <sub>8</sub> a	408	439 <sup>1</sup> / <sub>2</sub>	+359 <sup>1</sup> / <sub>2</sub>
PFIZER (CHAS.) & CO.	11 <sup>1</sup> / <sub>4</sub> a	45 <sup>1</sup> / <sub>4</sub> a	10 <sup>1</sup> / <sub>8</sub> a	33	35 <sup>1</sup> / <sub>2</sub>	+ 21 <sup>1</sup> / <sub>4</sub>
RADIO CORP. OF AMERICA	23 <sup>1</sup> / <sub>4</sub>	71	22 <sup>1</sup> / <sub>2</sub>	64 <sup>1</sup> / <sub>2</sub>	48 <sup>1</sup> / <sub>2</sub>	+ 41 <sup>1</sup> / <sub>4</sub>
SAFEWAY STORES	13 <sup>1</sup> / <sub>8</sub> a	42 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>8</sub> a	36 <sup>1</sup> / <sub>2</sub>	29 <sup>1</sup> / <sub>2</sub>	+ 23%
SEARS, ROEBUCK	20 <sup>1</sup> / <sub>4</sub> a	50%	18 <sup>5</sup> / <sub>8</sub> a	48 <sup>1</sup> / <sub>2</sub>	31 <sup>1</sup> / <sub>2</sub>	+ 28%
MONSANTO CHEMICAL	25 <sup>3</sup> / <sub>8</sub> a	55 <sup>1</sup> / <sub>2</sub> a	24 <sup>1</sup> / <sub>2</sub> a	49 <sup>1</sup> / <sub>2</sub> a	31 <sup>1</sup> / <sub>2</sub>	+ 24 <sup>1</sup> / <sub>2</sub>
GENERAL TELEGRAPH & ELEC.	19 <sup>7</sup> / <sub>8</sub> a	79	19 <sup>3</sup> / <sub>8</sub> a	76	59 <sup>1</sup> / <sub>2</sub>	+ 56 <sup>1</sup> / <sub>2</sub>
MINNESOTA MINING & MFG.	28 <sup>3</sup> / <sub>4</sub> a	151 <sup>1</sup> / <sub>2</sub>	27 <sup>5</sup> / <sub>8</sub> a	148 <sup>1</sup> / <sub>2</sub>	123 <sup>1</sup> / <sub>2</sub>	+119 <sup>1</sup> / <sub>2</sub>
AMERICAN CYANAMID	23 <sup>3</sup> / <sub>4</sub> a	65 <sup>1</sup> / <sub>2</sub>	21 <sup>3</sup> / <sub>8</sub> a	60	43 <sup>1</sup> / <sub>2</sub>	+ 36 <sup>1</sup> / <sub>2</sub>
GENERAL DYNAMICS	12a	68 <sup>1</sup> / <sub>2</sub>	12a	44 <sup>1</sup> / <sub>2</sub>	56 <sup>1</sup> / <sub>2</sub>	+ 32%
LEHMAN CORP.	17 <sup>1</sup> / <sub>8</sub> a	32 <sup>1</sup> / <sub>2</sub>	17a	29 <sup>1</sup> / <sub>2</sub>	15 <sup>1</sup> / <sub>2</sub>	+ 12%
STANDARD OIL OF CAL.	23 <sup>7</sup> / <sub>8</sub> a	62 <sup>1</sup> / <sub>2</sub>	23 <sup>7</sup> / <sub>8</sub> a	48 <sup>1</sup> / <sub>2</sub>	38 <sup>1</sup> / <sub>2</sub>	+ 24%

\* 1959 prices thru 11/6/59.

\*\* Difference between 1954—1959 high and low.

† Difference between opening and last prices.

a Adjusted for stock dividends or splits.

of 1954 for \$4,766. By the end of the first week in November 1959, the market value of such a

portfolio would have ballooned to \$15,049—an appreciation of \$10,283, or 215 per cent.

#### SWITZERLAND VS. MEXICO

Banking is based on confidence. There are many individuals, and corporations as well, that place great stress on confidence. They don't want everyone to know what they are doing — not that they are necessarily doing anything that wouldn't stand the light of day, but they have a repugnance to publicity.

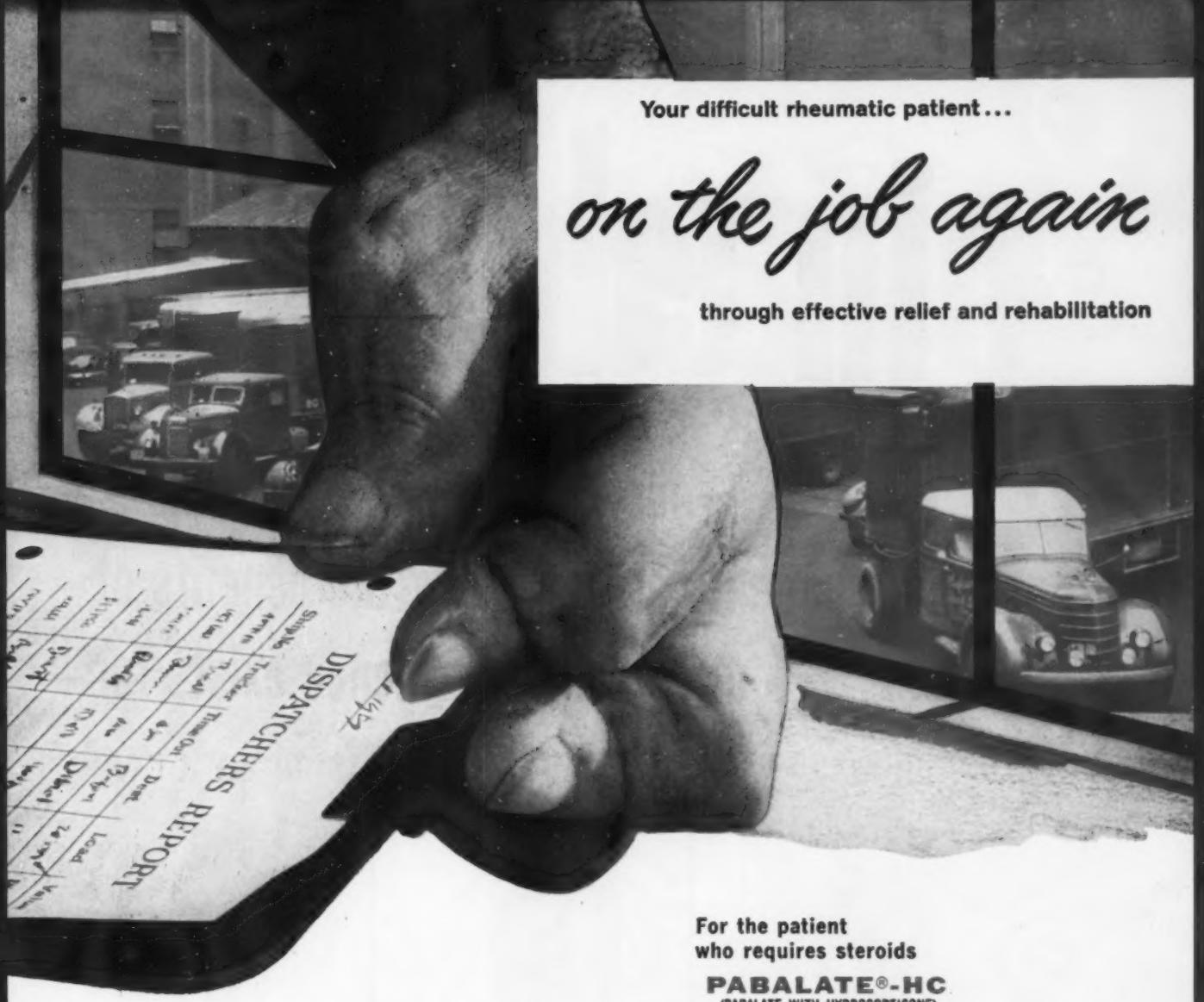
Because Swiss banks have gained a reputation for confidential treatment and only a few individuals know the name of a depositor or what he is doing, the banks of that country have attracted deposits from nationals of all countries of the world.

Now they may be in for some competition. Mexican banks are introducing "numbered

accounts." That means an account at a bank may not bear a name—it will have a number.

In Basle a spokesman for the Swiss banking fraternity said, "We do not think that Spanish or Latin American accounts now profiting from Swiss bank secrecy will move to Mexico in any sizable quantity.

"After all, what the owners of certain accounts want above all is anonymity. Whether they keep them in Switzerland or move them to Mexico is a matter of confidence. We doubt very much that anyone would trust a Mexican bank more than a Swiss bank, and we do not expect the new Mexican measure to affect us once it enters into force."



Your difficult rheumatic patient...

*on the job again*

through effective relief and rehabilitation

For the patient  
who requires steroids

**PABALATE®-HC**  
(PABALATE WITH HYDROCORTISONE)

Comprehensive synergistic  
combination of steroid and  
nonsteroid antirheumatics...  
full hormone effects on low  
hormone dosage... satisfactory  
remission of rheumatic  
symptoms in 85% of patients  
tested.

In each enteric-coated tablet:  
Hydrocortisone (alcohol) ..... 2.5 mg.  
Potassium salicylate ..... 0.3 Gm.  
Potassium para-aminobenzoate.. 0.3 Gm.  
Ascorbic acid ..... 50.0 mg.

For the patient who does not require steroids

**PABALATE®**

Reciprocally acting nonsteroid  
antirheumatics... more  
effective than salicylate alone.

In each enteric-coated tablet:

Sodium salicylate U.S.P....0.3 Gm. (5 gr.)  
Sodium para-aminobenzoate .....0.3 Gm. (5 gr.)  
Ascorbic acid .....50.0 mg.

or for the patient  
who should avoid sodium

**PABALATE® - Sodium Free**  
Pabalate, with sodium salts  
replaced by potassium salts.

In each enteric-coated tablet:  
Potassium salicylate .....0.3 Gm. (5 gr.)  
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Ascorbic acid .....50.0 mg.

**PABALATE®**  **PABALATE-HC**

For steroid or non-steroid therapy: SAFE DEPENDABLE ECONOMICAL

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA • Ethical Pharmaceuticals of Merit since 1878

# in edema or

- more doctors are prescribing -
- more patients are receiving the benefits of -
- more clinical evidence exists for -



in congestive failure



in hypertension



in premenstrual edema

"Chlorothiazide was given to 16 patients for a total of 295 patient-treatment days." "Chlorothiazide is a safe, oral diuretic with a clinical effect equal to or greater than a parenteral mercurial." Harvey, S. D. and DeGraff, A. C.: N. Y. State J. Med., 59:1769, (May 1) 1959.

"... our program has been one of polypharmacy in which we attempt to deplete body sodium with chlorothiazide. This drug is continued indefinitely as background medication for all antihypertensive drugs." Moyer, J. H.: Am. J. Cardiology, 3:199, (Feb.) 1959.

"Chlorothiazide is an excellent agent for relief of swelling and breast soreness associated with the premenstrual tension syndrome, since all patients [50] with these complaints were completely relieved." Keyes, J. W. and Berlacher, F. J.: J.A.M.A., 169:109, (Jan. 10) 1959.

DOSAGE: Edema—One or two 500 mg. tablets DIURIL once or twice a day. Hypertension—One 250 mg. tablet DIURIL twice a day to one 500 mg. tablet DIURIL three times a day.

SUPPLIED: 250 mg. and 500 mg. scored tablets DIURIL (chlorothiazide) in bottles of 100 and 1,000.  
DIURIL is a trademark of Merck & Co., Inc.  
Additional information is available to the physician on request.

# hypertension

# DIURIL®

(CHLOROTHIAZIDE)

*than for all other diuretic-antihypertensives combined!*



in edema of pregnancy



in cirrhosis with ascites



in renal edema

"One hundred patients were treated with oral chlorothiazide." "In the presence of clinically detectable edema, the agent was universally effective." "Chlorothiazide is at present the most effective oral diuretic in pregnancy." Landesman, R., Ollstein, R. N. and Quinton, E. J.: N. Y. State J. Med., 59:66, (Jan. 1) 1959.

"All three of the patients with Laennec's cirrhosis, ascites and edema had a favorable response, with a mean weight loss of 8 lbs., during the five-day treatment period with a slight decrease in edema." Castle, C. N., Conrad, J. K. and Hecht, H. H.: Arch. Int. Med., 103:415, (March) 1959.

"In a study of 10 patients with the nephrotic syndrome associated with various types of renal disease, orally administered chlorothiazide was a successful, and sometimes dramatic, diuretic agent." Burch, G. E. and White, M. A., Jr.: Arch. Int. Med., 103:369, (March) 1959.



MERCK SHARP & DOHME  
Division of Merck & Co., Inc., Philadelphia 1, Pa.

## GAINS IN DRUG INDUSTRY

The drug industry has continued its impressive growth trend this year it is indicated in "Science and Securities," a quarterly publication prepared by the research staff of Harris, Upham & Co., and edited by the firm's consultant, Gordon R. Molesworth.

First half sales of major drug companies exceeded the like period of 1958 by 6 to 7 per cent, its report indicates. Earnings showed

a somewhat smaller increase due, in part, to price weakness in certain product groups, e.g., vitamins, penicillin, streptomycin, and steroids.

The long term outlook for the drug industry continues to be very attractive the firm believes. Increasing emphasis on research — research expenditures in 1959 will exceed \$190 millions compared with \$127 millions last year — will result in an accelerated rate of new product

## AUTOMATED EDUCATION

A machine, known as the "Tutor," threatens to bring automation into the field of education. It has been developed by the Western Design Division of U. S. Industries, Inc., which described it as the first machine of its kind to become commercially available.

It treats the students as intelligent human beings while ensuring their active participation in the learning process, its sponsors say. This automated device simultaneously grades a student's work, times his performance and advances him at a rate determined by his demonstrated ability to absorb the information presented.

C. W. Sponsel, president of Western Design, claims a major breakthrough in the field, calling the trainer a first in making possible interaction between a teaching machine and the trainee; that is, it completely adapts itself to the student's pace.

Here's how the device works:

The student begins by pushing the number one on a keyboard, and the filmed image number one appears on a viewing screen. This image contains the first unit of information on the given subject, plus a multiple-choice question based on that information. The student selects his answer and enters its number on the keyboard, whereupon the tutor locates and presents the results in a new image. If the answer was incorrect, the image tells this to the student, explains why, supplies him with additional information to correct his error, and instructs him to go back and try again.

If the answer was right, however, the machine congratulates him, supplies the next unit

of information and the next multiple choice question.

The company says the problem of individual differences in the learning processes are largely overcome with the tutor, that it increases student motivation by making him aware of his progress, stresses conceptual thinking rather than mere facts, and saves 20 per cent in training time.

According to Norman A. Crowder, Western Design research psychologist, the machine almost forces the student to respond, reduces any passivity and lack of desire during the learning period.

Any material having a systematic, logical basis can be taught by the device, he said. Crowder hinted that adaptations of similar machines for psychotherapeutic purposes is a distinct future possibility.

Sponsel pointed out that "the trend to industrial automation has not decreased reliance on key personnel, but rather has integrated human and machine functions more closely than ever before."

"We thus find a growing demand in both military and industrial circles for a positive means to insure that the human links in the chain are suitably trained for their jobs and are capable of performing them," he added. "One must certify actual knowledge, as our new tutor can do. It isn't enough simply to list the number of hours put in."

Sponsel said that the tutor is not designed nor intended to fill the roll of the creative teacher. The machine "will free the teacher for his real creative role."



*for  
the  
tense  
and  
nervous  
patient*

**relief comes fast and comfortably**

- does not produce autonomic side reactions
- does not impair mental efficiency, motor control, or normal behavior.

*Usual Dosage:* One or two 400 mg. tablets t.i.d.

*Supplied:* 400 mg. scored tablets, 200 mg. sugar-coated tablets or as MEPROTABS®—400 mg. unmarked, coated tablets.

**Miltown®**  
meprobamate (Wallace)



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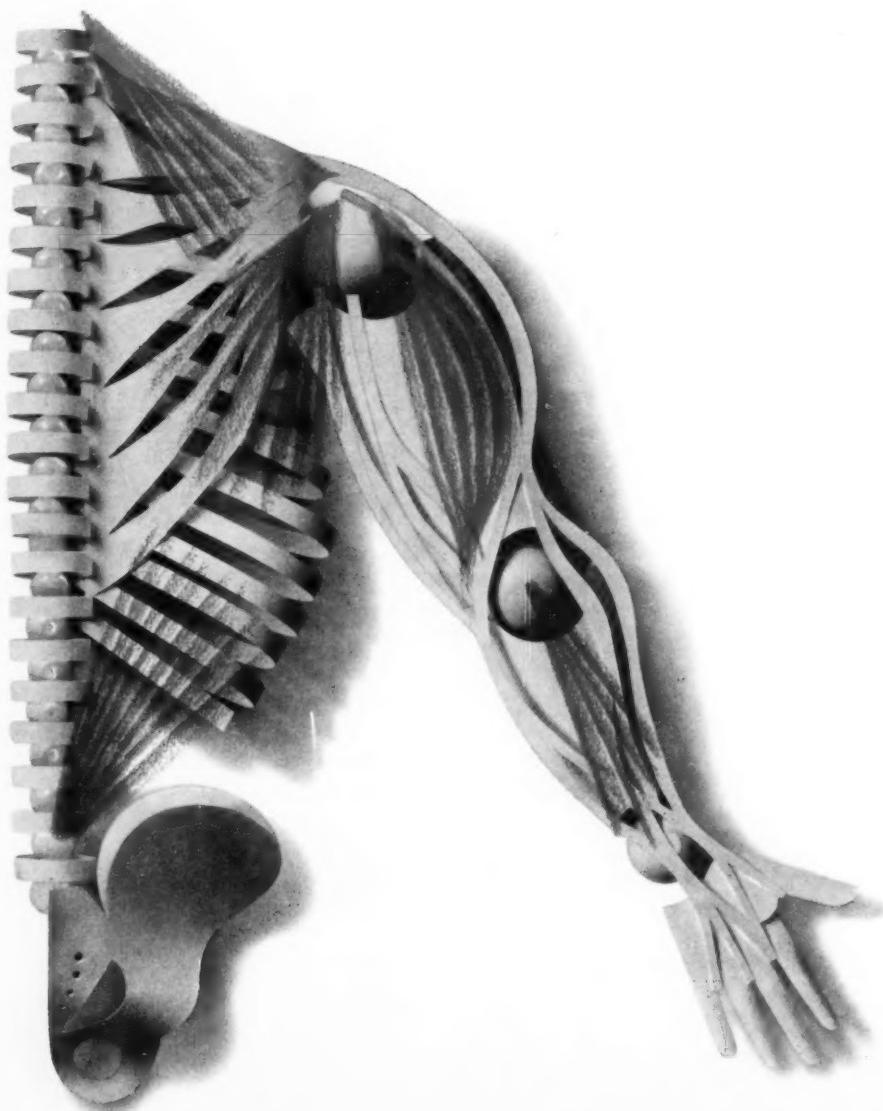
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- potent...fast relief in acute conditions
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low back  
pain  
  
bursitis  
  
strains  
and sprains  
  
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conditions  
  
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**SOMA RELIEVES PAIN** in a unique way by modifying central perception of pain without abolishing natural defense reflexes.

**SOMA RELAXES MUSCLE SPASM . . .** approximately 8 times more potent than meprobamate or mephenesin.

**PHYSICIANS'**

**REPORTS:** "Marked pain-relieving effects of the new drug [SOMA] were seen in conditions involving muscle spasm and stiffness, whether acute or chronic. Relief from pain was usually rapid and sometimes dramatic." (90 patients.) *Kuge, T.: Submitted for publication.*

"In 86 percent of the patients there were excellent or good results. . . . Relief of pain was noted by the patients' statements, by the diminished need for analgesic drugs, and by improved sleep." (154 patients.)

*Wein, A. B.: The Use of Carisoprodol in Orthopedic Surgery and Rehabilitation. Proceedings of the Symposium on The Pharmacology and Clinical Usefulness of Carisoprodol. Wayne State University Press, Detroit, 1959, p. 156.*

In a double-blind study, SOMA was reported to be "clinically effective to a highly significant degree." (92 patients.)

*Cooper, C. D., and Epstein, J. H.: The Clinical Evaluation of Carisoprodol by a double-blind technique. Ibid. p. 97.*

*Notable safety—extremely low toxicity; no known contraindications; side effects are rare; drowsiness may occur, usually at higher dosage*

*Rapid action—starts to act quickly*

*Sustained effect—relief lasts up to 6 hours*

**Easy to use—usual adult dose is one 350 mg. tablet 3 times daily and at bedtime**

*Supplied—as white, coated, 350 mg. tablets, bottles of 50.*

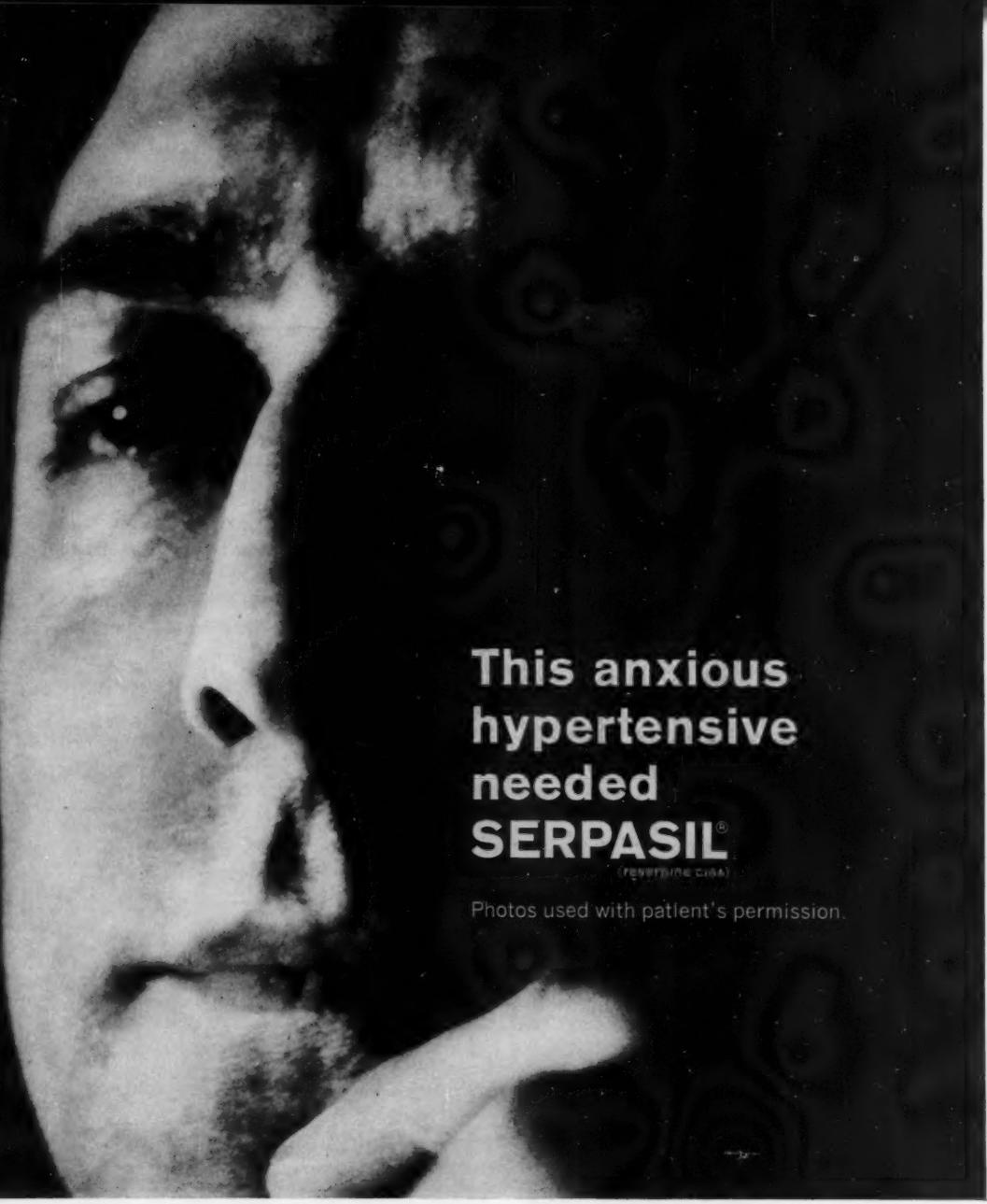
*Also available for pediatric use: 250 mg. orange capsules, bottles of 50.*

# SOMA

(carisoprodol Wallace)

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*Literature and samples on request*  **WALLACE LABORATORIES, New Brunswick, New Jersey**



This anxious  
hypertensive  
needed  
**SERPASIL®**

(reserpine 0.25)

Photos used with patient's permission.

The patient, L.J., age 40, carried with him throughout the day a burden of worries, doubts and fears.

At time of consultation, his blood pressure was 180/120 mm. Hg. He was particularly nervous about the effect his condition might have on his job, his future, his home and family life.

Thorough physical examination, including EKG, renal function, examination of ocular fundi, and a test to rule out pheochromocytoma, disclosed nothing of importance.

Diagnosis: essential hypertension.

Treatment: Serpasil 0.25 mg. q.i.d.





With Serpasil, L. J. is better able to deal with his everyday problems. One month after starting therapy, his blood pressure has decreased to 120/90 and has remained steady on reduced dosage (0.25 mg. b.i.d.).



**Physician's Comment:** "In addition to its favorable influence on his blood pressure, Serpasil improved this patient's emotional problems. The only side effect has been a slight degree of sleepiness."

**SUPPLIED:** Tablets, 0.1 mg., 0.25 mg. (scored) and 1 mg. (scored). Complimentary supply on request.

CIBA  
SUMMIT - NEW JERSEY

## ANXIETY: A PRIME FACTOR IN HYPERTENSION

Wilfred Dorfman, M.D., F.A.C.P.

*President, Academy of Psychosomatic Medicine*

*Assistant Attending Physician,*

*Dept. of Medicine, Maimonides Hospital of Brooklyn*

*Senior Psychiatrist, Brooklyn State Hospital*

*Clinical Instructor in Psychiatry,*

*New York School of Psychiatry*

My experience, and it is not unique, indicates that emotional factors play a vital role in the pathogenesis, symptomatology, prognosis and treatment of hypertension.

Anxiety, for example, can produce vasoconstriction, thereby raising blood pressure. And anxiety-induced blood pressure elevations that are transient in the late teens and early twenties frequently become sustained in the forties and fifties.

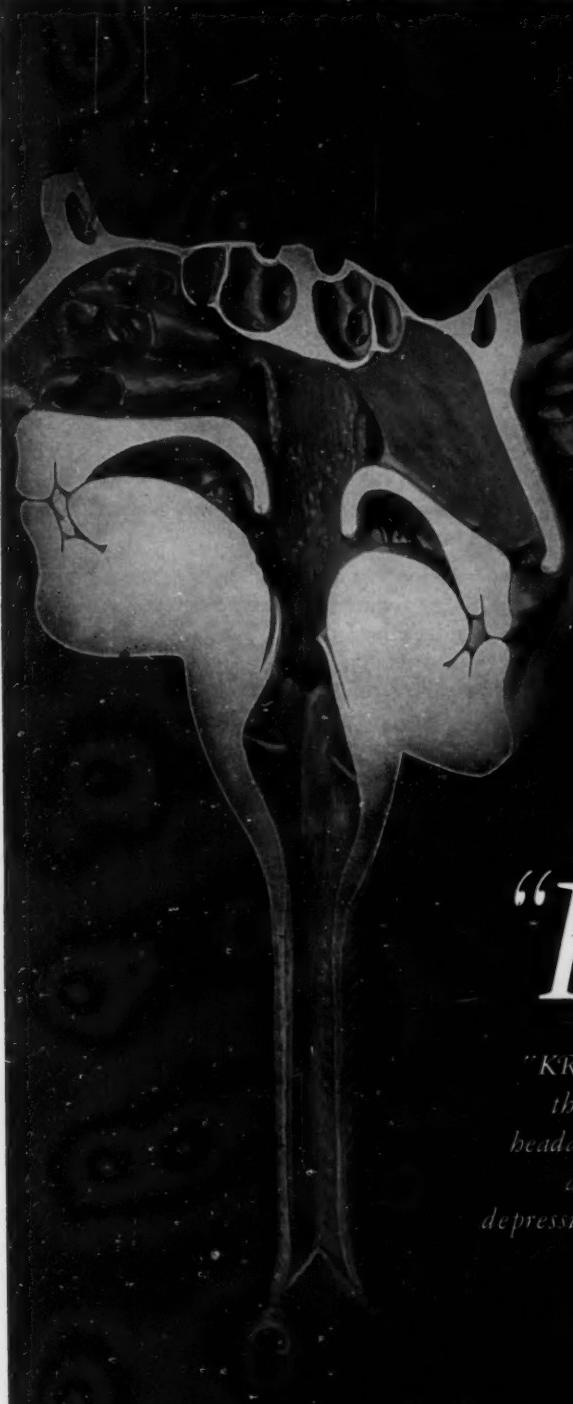
Hypertension "symptoms" such as headache, dizziness and fatigue (which often are not directly related to the level of the blood pressure) may actually stem from unresolved tension, as may associated symptoms like tachycardia, excessive perspiration and cold hands and feet. For the most part, high blood pressure patients are not—as popular conceptions would have us believe—bellicose, expansive individuals. Aggressive they may be, but their aggressive impulses are, characteristically, turned inward. Clinically one usually finds they are *too* tranquil, *too* self-controlled. Beneath their placid exteriors lie tensions that may well be responsible for much of their symptomatology.

Emotions affect prognosis in hypertension, too. It appears that acute psychic stress is one of the triggers that suddenly sets off the malignant phase in patients whose hypertension has run a long benign course.

### How to "Listen" for Anxiety

Because of its multiple effects, it is important to assess the degree of anxiety in the hypertensive patient. What he says and how he says it are significant indicators. Here are some of the things to listen for: Is the patient's speech too rapid, incessant, occasionally incoherent? Is his story disorganized? Does he relate multiple somatic complaints, which follow no known disease pattern? Does he flit from one symptom to another without pause, or does he elaborate on each in infinite detail? Does he reveal feelings of panic which are associated with his symptoms?

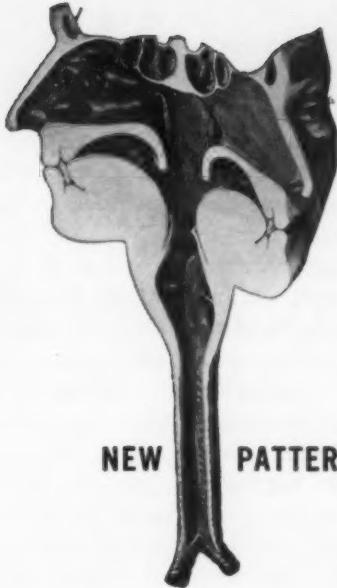
These are all signs suggestive of anxiety. By being alert for them the physician becomes more sensitive to his patient's needs. Thus he will avoid casual, inadvertent remarks which in anxious, over-reactive hypertensives may be prejudicial. Equally important, he will be able to plan a therapeutic program that will control his patient's anxiety-induced symptoms as well as his high blood pressure.



*Latest advance  
in treatment of  
Sinus & Nasal  
Congestion*

*new*  
**"KRYL"**

"KRYL" provides rapid relief from  
the congestion as well as associated  
headache, fever, aches and pains of colds  
and allergic rhinitis — without  
depression — without stimulation.



## NEW PATTERN IN SINUS AND NASAL DECONGESTION

**ANTIHISTAMINE ACTION  
WITHOUT SEDATION**

**SYSTEMIC DECONGESTION  
WITHOUT SIDE EFFECTS**

**ANALGESIC-ANTIPYRETIC ACTION  
WITHOUT DRUG STIMULATION**

**ANTI-STRESS VITAMIN TO  
MAINTAIN TISSUE INTEGRITY**

"**THERUHISTIN**" — Newest type of antihistamine for control of excessive nasal secretion and congestion—highly potent (92 per cent effective)<sup>1</sup> yet unusually free from side effects—less than one per cent incidence of drowsiness.<sup>1-3</sup>

***I-Phenylephrine*** — Unusually long-acting oral vasoconstrictor<sup>4</sup> relieves nasal blockage, promotes better drainage—without local pathologic changes reported with topical agents. Relieves bronchial spasm.

***Aspirin and Phenacetin*** — Analgesic-antipyretic synergists, to relieve fever, aches and pains. Freedom from antihistamine drowsiness obviates need for drug stimulants.

***Ascorbic Acid*** — High levels of vitamin C aid in preventing nasal edema due to impaired vascular and mucous membrane integrity,<sup>5</sup> and replenish adrenal ascorbic acid reserves.<sup>6</sup>

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**"KRYL"**

**DOSAGE:** Adults, 2 tablets initially. Thereafter, and until symptoms disappear, 1 tablet every four hours. Children (6 to 12), half the adult dose.

**SUPPLIED:** Bottles of 100 and 1,000 tablets.

for symptomatic relief of colds, hay fever, and sinus congestion

Each tablet contains:

Isothipendyl HCl ("Theruhistin") . . . . .	4 mg.
Aspirin . . . . .	230 mg.
Phenacetin . . . . .	160 mg.
<i>I-Phenylephrine HCl</i> . . . . .	5 mg.
Ascorbic Acid . . . . .	100 mg.

**REFERENCES:** 1. New and Unused Therapeutics Committee, Am. Coll. Allergists: Ann. Allergy 16:237 (May-June) 1958. 2. Spielman, A. D.: Ann. Allergy 16:242 (May-June) 1958. 3. Spielman, A. D.: New York J. Med. 57:3329 (Oct. 13) 1957. 4. Hunnicutt, L. G.: Bull. Vancouver M. A. 28:348 (July) 1952. 5. Hunnicutt, L. G.: Bull. Vancouver M. A. 28:352 (July) 1952. 6. Pirani, C. L.: Metabolism 1:197 (May) 1952.

*Ayerst Laboratories,*  New York 16, N. Y. • Montreal, Canada

5881

## ELECTRONICS IN MEDICINE

The science of electronics is well recognized as an aid to the medical profession. Two new important developments in the use of electronic devices by the profession were reported in the July issue of "Keeping Up," the monthly informational bulletin of Television Shares Management Corporation, investment managers and principal underwriters of Television-Electronics Fund, Inc.

The publication cited the invention by a British scientist of an electronic stethoscope for particular use in childbirth and the development by Bell Telephone scientists of a man-made electronic larynx for persons who lost their voices through surgical removal or paralysis of their vocal cords.

The stethoscope enables a doctor to hear amplified heart sounds of a baby as it is being born and was first used at the Mother's Hospital of the Salvation Army in Hackney, London. This electronic medical advance is ex-

pected to reduce the number of stillborn babies. The device is so sensitive that it can detect whether an unborn baby has a heart defect which will need repairing. The stethoscope unit comprises two small contact microphones, which are strapped to the mother; a "soniscope" which amplifies the heart sounds, and a loudspeaker.

The man-made larynx, still in the experimental stage, was made possible by transistors and miniaturization of other electronic components, the publication said, and consists of a small vibrating driver (transducer) held against the throat, a transistorized pulse generator with pitch control, and a battery power supply. To use the unit, the affected person presses the vibrator against his throat. Switching on the pulse generator with his finger, he transforms vibrations transmitted into his throat cavities into speech sounds as if he were speaking normally.

## A MONUMENT TO FAILURE

The words "oil well" have become almost synonymous with "great wealth."

It isn't necessarily so, because companies and individuals, spend huge sums of money drilling wells that produce nothing, neither oil nor gas. These are known as dry holes. If it weren't for dry holes the industry presumably would save a lot of money, and gasoline would be cheaper, but unsuccessful drilling is part and parcel of being in the business.

The industry paid homage during the summer to the men who have tried and failed. A lot of men deserve this honor, for the number of dry holes over the country is estimated at half a million.

The specific well selected for the ceremony was the Grandin Well at Tidioute, Pa., and the honor was accepted, on behalf of the multitude of unsuccessful drillers by Ed Lutz, who was born August 15, 1859, just twelve days before the industry was born. On August

27 of that year Col. Edwin L. Drake drilled a well at Titusville, Pa., that produced oil.

Mr. Lutz unveiled a monument of native slag stone rising five feet above the ground. On it was a plaque that read:

"The Grandin Well. World's second oil well, commenced Aug. 31, 1859. It was the first dry hole; first well in which tools were stuck; first well in which an explosive charge was used; first well in Warren county. Erected July 22, 1959, by Oil Centennial, Inc."

Drilling an oil well today costs anywhere from \$100,000 to \$3,000,000. J. Paul Jones, Chairman of Oil Centennial, observed that oil men today must be just as willing to risk their entire investment in a new well as Grandin was.

"It is fitting," Mr. Jones said, "that this ceremony take place here at the site of the oil industry's first failure. For failure has been an integral risk in the search for oil even since the days before the industry existed."

# RESULTS IN 366 PATIENTS WITH STOMACH ULCERS

DIAGNOSIS	TOTAL	MARKED IMPROVEMENT WITH X-RAY GAINS	MARKED IMPROVEMENT	SLIGHT IMPROVEMENT	NO IMPROVEMENT
PEPTIC	50	10	29	9	2
GASTRIC	56	11	33	10	2
DUODENAL	256	39	175	33	9
PYLORIC	4	—	1	2	1
<b>TOTAL</b>	<b>366</b>	<b>60</b>	<b>238</b>	<b>54</b>	<b>14</b>
Summary of investigators' reports.					
		<b>16%</b>	<b>65%</b>	<b>15%</b>	<b>4%</b>

REPORTED BY PATIENTS, CONFIRMED BY X-RAY,  
81% MARKED IMPROVEMENT IN STOMACH ULCER.

*proven relief of pain, spasm and nervous tension without the side effects of belladonna, bromides or barbiturates*

## INDICATIONS—

duodenal and gastric ulcer  
gastritis  
colitis  
spastic and irritable colon  
gastric hypermotility  
esophageal spasm  
intestinal colic  
functional diarrhea  
G. I. symptoms of anxiety states

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for adjustability of dosage

Milpath - 400—Yellow, scored tablets of 400 mg. meprobamate and 25 mg. tridihexethyl chloride (formerly supplied as the iodide). Bottle of 50.

*Dosage:* 1 tablet t.i.d. at mealtime and 2 at bedtime.

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now! liquid  
tetracycline in  
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a Squibb first in pediatrics

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Phosphate Potentiated Tetracycline Aqueous Drops



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**for the mother . . . CONVENIENT to give . . .** she can be certain that the baby gets all of the dose you prescribe. **for the child . . . EASY to take . . .** the patient may be too young to swallow . . . but Sumycin Pressules are delicious. **for the physician . . . SIMPLE to prescribe . . .** the only premeasured tetracycline for oral use . . . no leftover doses . . . no wasted doses . . . economical . . . prescribe just the amount needed. Each Sumycin Pressule delivers 1 cc. of an aqueous tetracycline suspension, potentiated with potassium metaphosphate, deliciously flavored with mixed fruits. This dose provides 100 mg. of tetracycline (HCl equivalent). **DOSAGE.** Just one Pressule q.i.d. for an average 1 to 5 year old. Infants and children should receive 10 to

20 mg. of tetracycline/lb. of body weight. Thus for a child weighing from 20 to 40 pounds, one Pressule q.i.d. will be sufficient for the vast majority of infections. For children weighing more than 40 pounds, give 2 or more Sumycin Pressules q.i.d., according to body weight, or Sumycin Syrup. For infants under 20 pounds, administer Sumycin Aqueous Drops. **SUPPLIED:** Sumycin Syrup, a fruit flavored aqueous suspension, buffered with potassium metaphosphate, containing tetracycline equivalent to 125 mg. tetracycline HCl per 5 cc., and Sumycin Aqueous Drops, a fruit flavored aqueous suspension, buffered with potassium metaphosphate, containing tetracycline equivalent to 100 mg. tetracycline HCl per cc. **SQUIBB**



Squibb Quality — the  
Priceless Ingredient

Q

A

Inquiries are received from a number of investors asking for information regarding specific securities. Answers are presented here on the basis of information received from recognized analysts and represent their considered opinion.

**Tobacco Industry**—Douglas J. M. Graham of R. W. Pressprich & Co. looks for a revaluation of cigarette stocks for three reasons: gradual diminution of the health controversy linking cancer with smoking; the accelerated increase in the teen-age population; and the continued increase in sales which is being translated into impressive gains in earnings per share.

**American Telephone & Telegraph**—Schroeder Boulton of Goodbody & Co. believes that the three-for-one stock split and the higher dividend paid last year by A. T. & T. signals a major change in the big company's financial policy. Since increases in per share earnings and further increases in dividends may be projected, he suggests the investor look at the stock as both a growth issue and a good income producer.

**Missouri Pacific Railroad**—It is the dominant carrier in the Southwest. It has a heavy funded debt, even after completing its reorganization four years ago, but much of this debt bears contingent interest. Consequently J. T. Small of Paine, Webber, Jackson & Curtis looks with favor on its first mortgage C 4½s of 2005, which produce a handsome return.

**Rath Packing**—Increasingly brighter prospects for the meat packing industry, bolstered by abundant hog supplies and expected larger cattle marketings, have favorable implications for Rath Packing, in the opinion of H. Hentz & Co. Larger demand for the company's products, further diversification, and a higher level of production should permit greater efficiency in overall operations.

**United Carbon**—Increasing profitability of its natural gas operations, rising output of carbon black for the rubber industry and expansion into synthetic rubber have been the keys to United Carbon's substantial growth in postwar years, declares a study of the company prepared by Hirsch & Co. Aided by generous profit margins, volume gains have been translated into worthwhile expansion of earnings, while even more impressive has been the marked improvement in cash earnings.

**Land and Building Shares**—Capably managed companies which cater to the basic need for comfortable living quarters should enjoy rewarding returns, observes Brand, Grumet & Seigel, which likes particularly All-State Properties, Arvida, City Investing, Florida Palm-Aire, General Builders, General Development, Lefcourt Realty and Southern Realty & Utilities.

**Fire and Casualty Shares**—Reynolds & Co. says rising premium volume, plus the favorable trend of profit margins, highlight the good outlook for most companies in the fire and casualty field. At the same time, increasing investment income is adding to per share earnings. Dividend increases may well be considered this year by many in the industry. Among issues which the firm favors for capital appreciation are Fireman's Fund, Reliance Insurance, Insurance Company of North America, Travelers Insurance and Employers' Reinsurance Corporation.

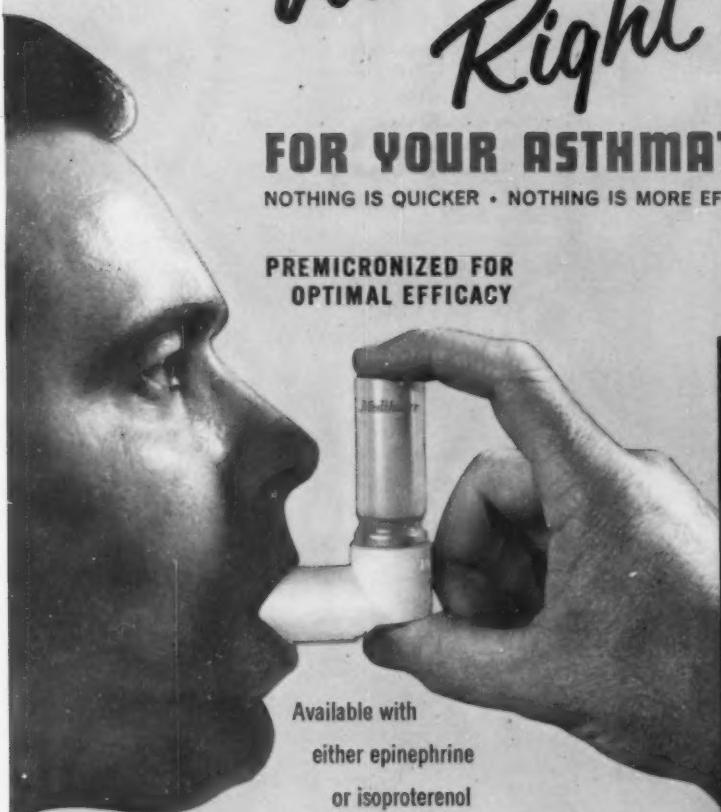
**National Distillers & Chemical**—Its diversification into chemicals, particularly polyethylene, is the most important development in this company in recent years. Shearson, Hammill & Co. notes that this expansion has been highly successful and is accounting for about 45 per cent of sales, the balance coming from liquor.

*22½% More  
Vital Capacity  
Right Now*

**FOR YOUR ASTHMATICS**

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**PREMICRONIZED FOR  
OPTIMAL EFFICACY**



Available with  
either epinephrine  
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**Medihaler-EPI®**

Epinephrine bitartrate, 7.0 mg. per cc.,  
suspended in inert, nontoxic aerosol vehicle.  
Contains no alcohol. Each measured dose  
contains 0.15 mg. epinephrine.

**Medihaler-ISO®**

Isoproterenol sulfate, 2.0 mg. per cc.,  
suspended in inert, nontoxic aerosol vehicle.  
Contains no alcohol. Each measured  
dose contains 0.06 mg. isoproterenol.

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Wall Street firms are glad to supply those who are interested with views on various industries and companies. You can do us a favor if you mention Medical Times as the source of your information. A partial list of such literature that has come to hand recently follows.

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Because POLARAMINE Expectorant — Polaramine plus *d*-isoephephrine sulfate and glyceryl guaiacolate — Restores congested mucous membranes of the entire respiratory tract to normal...gently, rapidly...within only 15 to 30 minutes ■ Relieves unproductive coughing by increasing respiratory tract fluid output and by facilitating expectoration ■ Treats effectively the allergic components of respiratory illness ■ Is delicious...a new, different flavor.

POLARAMINE Expectorant is particularly valuable for the relief of coughs and complications of allergic conditions and the allergic manifestations of respiratory illnesses.

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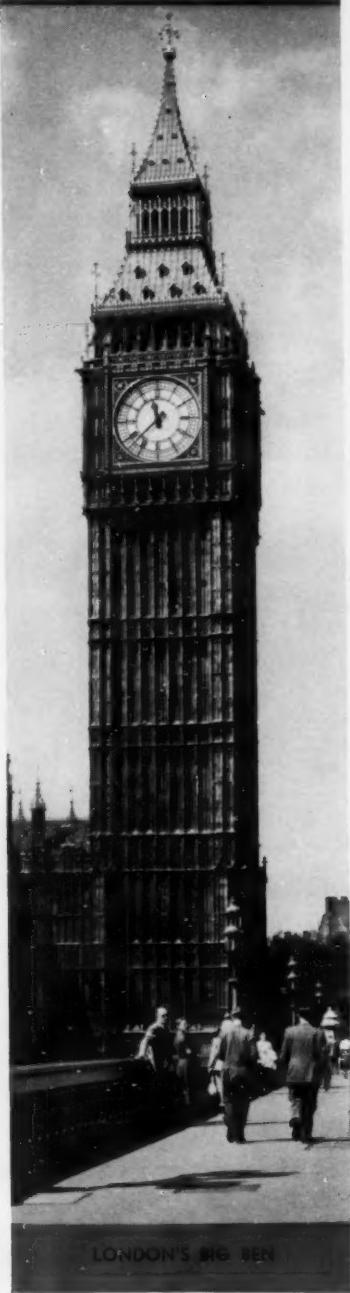
*Dosage:* Adults, 1 or 2 teaspoonfuls, 3-4 times daily; Children, 1/2 or 1 teaspoonful, 3-4 times daily.

*Supply:* 16 oz. bottles. SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY

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For  
Travel



## Family Physician Tour of London

*First stop on the two 1960 Family Physician Tours is Britain's capital city. Here the traveling doctors and their families will be shown the major places of interest before embarking on an excursion to the lovely Shakespeare Country.*

First stop on the two 1960 Family Physician Tours is London, a city of historical riches and warm traditions. So much of our own history is linked with this city it is natural that London continues to be a major goal of American tourists.

The London portion of both tours was planned to include the most popular sights: Buckingham Palace, Houses of the Parliament, Tower of London, St. Paul's Cathedral, Westminster Abbey, the Kensington museums, the old Curiosity Shop.

Stately Buckingham is the London home of the Royal Family and the scene of a traditional ceremony, the Changing of the Guard. The Tower of London (actually many towers) is the oldest fortress in Britain and grim repository of 900 years of history.

Here, under the guidance of a friendly "Beefeater," you'll see the places where Queen Anne Boleyn and others illustrious prisoners lost their heads and where Rudolf Hess was briefly incarcerated over Henry VIII's cowshed after the Nazi leader's "peace" flight to Scotland in 1941.

The great dome of war-damaged St. Paul's Cathedral overshadows the center of the city from Ludgate Hill. Here are the tombs of Nelson and Wellington, and the grave of Sir Christopher Wren, 17th-century creator of St. Paul's and 51 other London churches. Wren has the famous epitaph: "Reader, if you seek his monument, look around you."

Since William the Conqueror (1066), all English monarchs except Edward V and Edward VIII have been crowned at Westminster Abbey. Many are buried within its walls. The graves of many of the poets you first became acquainted with in high school or college can be found in Poets' Corner.

Much less impressive than any of the above, but still well

# Preludin®

brand of phenmetrazine  
hydrochloride

## reduces the problems of reducing

Through the potent appetite-suppressant action of Preludin, the success of anti-obesity treatment becomes more assured—adherence to diet becomes easier—discomfort from side reactions is unlikely.

**In Simple Obesity** Preludin produces 2 to 5 times the weight loss achievable by dietary instruction alone.<sup>1,2</sup>

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**In Hypertension** Preludin is well tolerated and blood pressure may even fall as weight is reduced.<sup>1</sup>

Patients taking Preludin usually experience a mild elevation of mood conducive to an optimistic and cooperative attitude, thereby counteracting the lassitude otherwise resulting from a reduced caloric intake. Thus, consistent weight loss over a prolonged period becomes more assured.

Preludin® Endurets, T.M. brand of phenmetrazine hydrochloride: prolonged-action tablets of 75 mg. for once daily administration; and scored, square, pink tablets of 25 mg for b.i.d. or t.i.d. administration.

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References:

- (1) Barnes, R. H.: J. A. M. A. 166:898, 1958.
- (2) Ressler, C.: J. A. M. A. 165:135, 1957.
- (3) Birnberg, C. H., and Abitbol, M. M.: Obst & Gynec. 11:463, 1958. (4) Robillard, R.: Canad. M. A. J. 76:938, 1957.

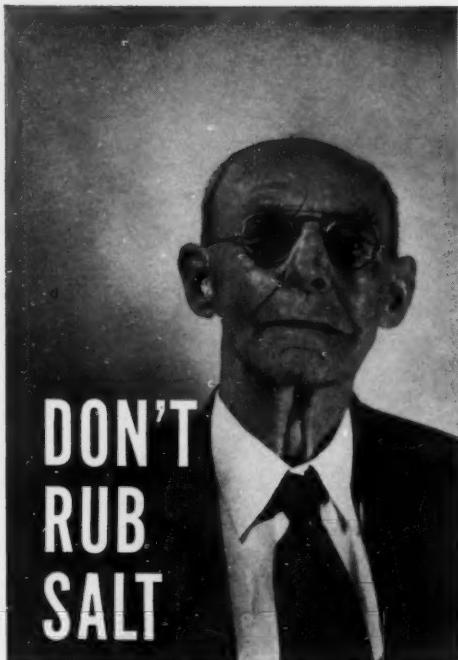
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whether obesity is simple  
or complicated



# Geigy

## TRAVEL



# DON'T RUB SALT IN HIS CARDIAC WOUND

Modern saluretics may seem to have made unlimited salt intake possible for cardiac and hypertensive patients. Yet despite the improvements in diuretic therapy, sodium restriction is still important in the prophylaxis of edema. The wise physician does not add needlessly to the burden of his patient, nor test unnecessarily the power of the drugs he prescribes. It makes good sense to him to prescribe DIASAL—which looks, tastes and flavors food exactly like salt . . . but is sodium free.

Diasal contains potassium chloride, glutamic acid and inert ingredients. Supplied in shakers and 8 oz. bottles.

prescribe **DIASAL**  
sodium-free salt substitute  
  
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worth a visit, is the Old Curiosity Shop. Immortalized by Dickens, it is a small and unique piece of vanishing London. The shop retains its traditional sales of "old and curious articles," including a large selection of Dickens' first editions.

### Planned Tours

The above are some of the sights you will see in London on either of the two 1960 Family Physicians Tours. We are calling the tours to the attention of MEDICAL TIMES readers as part of our policy of providing practical travel information for the family physician.

The tours are scheduled for top travel seasons, the spring and summer. The first leaves New York on April 20, 1960, and returns May 31. It includes three days in Geneva, Switzerland, to enable you to attend the World Health Assembly. The second tour leaves New York August 10, 1960, and returns on September 20. The professional meeting on this itinerary is the International Congress of Internal Medicine, to be held at Basle, Switzerland, from August 24 to 27.

### Professional Interests

These tours are recommended to the physician for two basic reasons: They combine a well-planned European trip with an opportunity to attend professional meetings, and they offer the doctor the chance to travel with members

### TOUR INFORMATION

*For further information about the two tours for physicians described in this article, write to:*

SPECIAL INTEREST TOURS, INC.  
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*relieves rigidity  
and reduces muscle spasm  
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## PHENOXENE™ a new synthetic compound

"Chlorphenoxamine (Phenoxene) exerts a gentle yet potent action . . . a muscle relaxant action also an energizing and stimulating action, without induction of excitement or agitation. Patients are able to move faster and more freely and with greater strength and longer endurance. It helps to loosen rigid muscles, and it successfully counteracts akinesia, tiredness, and weakness."\*

\*Doshay, L. J., and Constable, K.: Treatment of Paralysis Agitans with Chlorphenoxamine Hydrochloride, J.A.M.A. 170:37 (May 2) 1959.

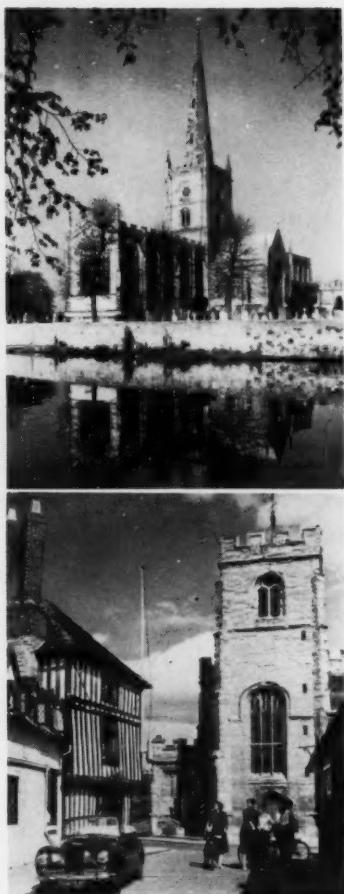
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## SHAKESPEARE COUNTRY

After seeing London, the Physicians Tour group will visit the Shakespeare Country and Oxford, a tour that is one of the most popular among American travelers.

Stratford-upon-Avon, the Bard's birthplace, is a pretty little country town that is surrounded by lovely countryside. The tour takes in the house where Shakespeare is thought to have been born; the cottage of his wife, Anne Hathaway, and Holy Trinity Church, where Shakespeare was christened and his children baptized. He is buried there, under a small stone slab.

The tour group then goes on to Warwick for tea and for a visit to Warwick Castle, famed for its antiquity and art collections, before returning to London. This one-day trip combines visits to historic sites with an opportunity to view some of England's most attractive countryside.

At the outskirts of Stratford-upon-Avon stands Holy Trinity Church (top), where Shakespeare and Anne Hathaway are buried. The Falcon Inn, across from Guild Chapel, maintains tradition of hospitality.

Photos: British Travel Association

## TRAVEL

of his own profession. This type of tour is called "a special interest tour," and is geared to the prime interests of a particular group. People in the wholesale travel business say these tours are becoming more and more popular.

If you, as a member of one of the tours, desire to visit an institution of medical or scientific interest, the planners of the tour will assist in making the necessary arrangements. For example, they will help in setting up a visit to the laboratories of any of the major pharmaceutical houses located in Basle, Switzerland. The same applies to research centers, hospitals and medical societies in other countries to be visited.

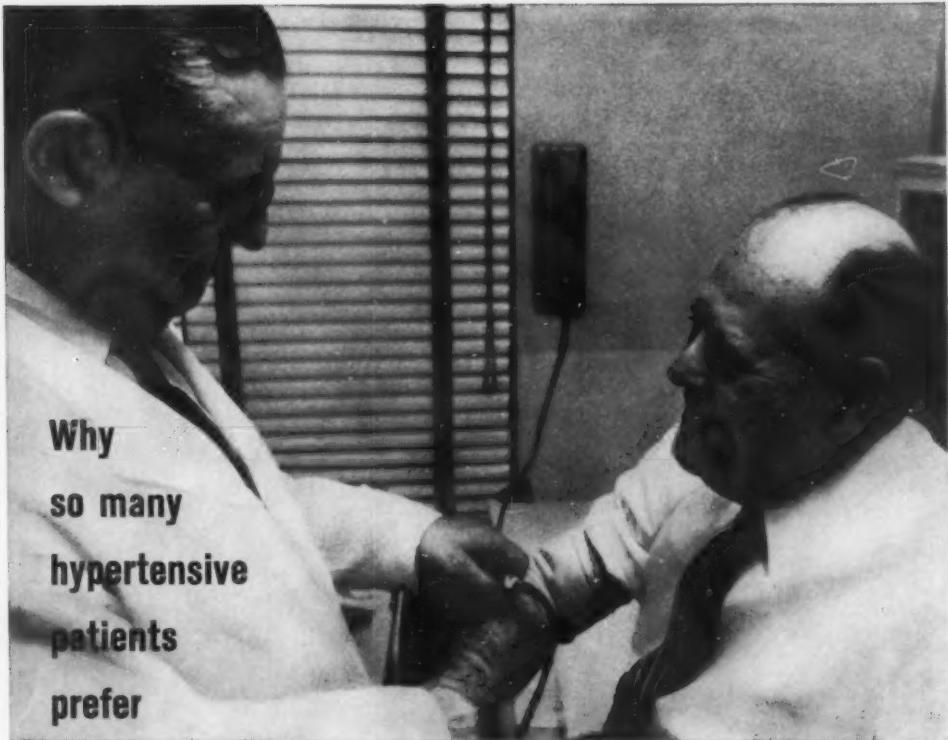
The two tours have similar itineraries as they are designed to give you and your family a comprehensive view of the outstanding attractions in England and on the Continent. Countries to be visited include England, Belgium, France, Switzerland, Italy, Austria and Germany.

### First-Class Travel

All travel arrangements and accommodations were chosen to insure comfortable and pleasant travel. If you desire to go by ship, the famed *Queen Mary* is the designated vessel; if by air (in order to cut travel time), you will be flown by one of the major airlines.

Hotel accommodations are designated "superior." This means such outstanding hosteries as the Hotel Grosvenor House in London and the Palace in Brussels.

*Continued on page 156a*



### Singoserp:

### It spares them from the usual rauwolfia side effects

**FOR EXAMPLE:** "A clinical study made of syrosingopine [Singoserp] therapy in 77 ambulant patients with essential hypertension demonstrated this agent to be effective in reducing hypertension, although the daily dosage required is higher than that of reserpine. Severe side-effects are infrequent, and this attribute of syrosingopine is its chief advantage over other Rauwolfia preparations. The drug appears useful in the management of patients with essential hypertension."\*

\*Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J. C.: J.A.M.A. 169:1609 (April 4) 1959.

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**First drug to try in new hypertensive patients**

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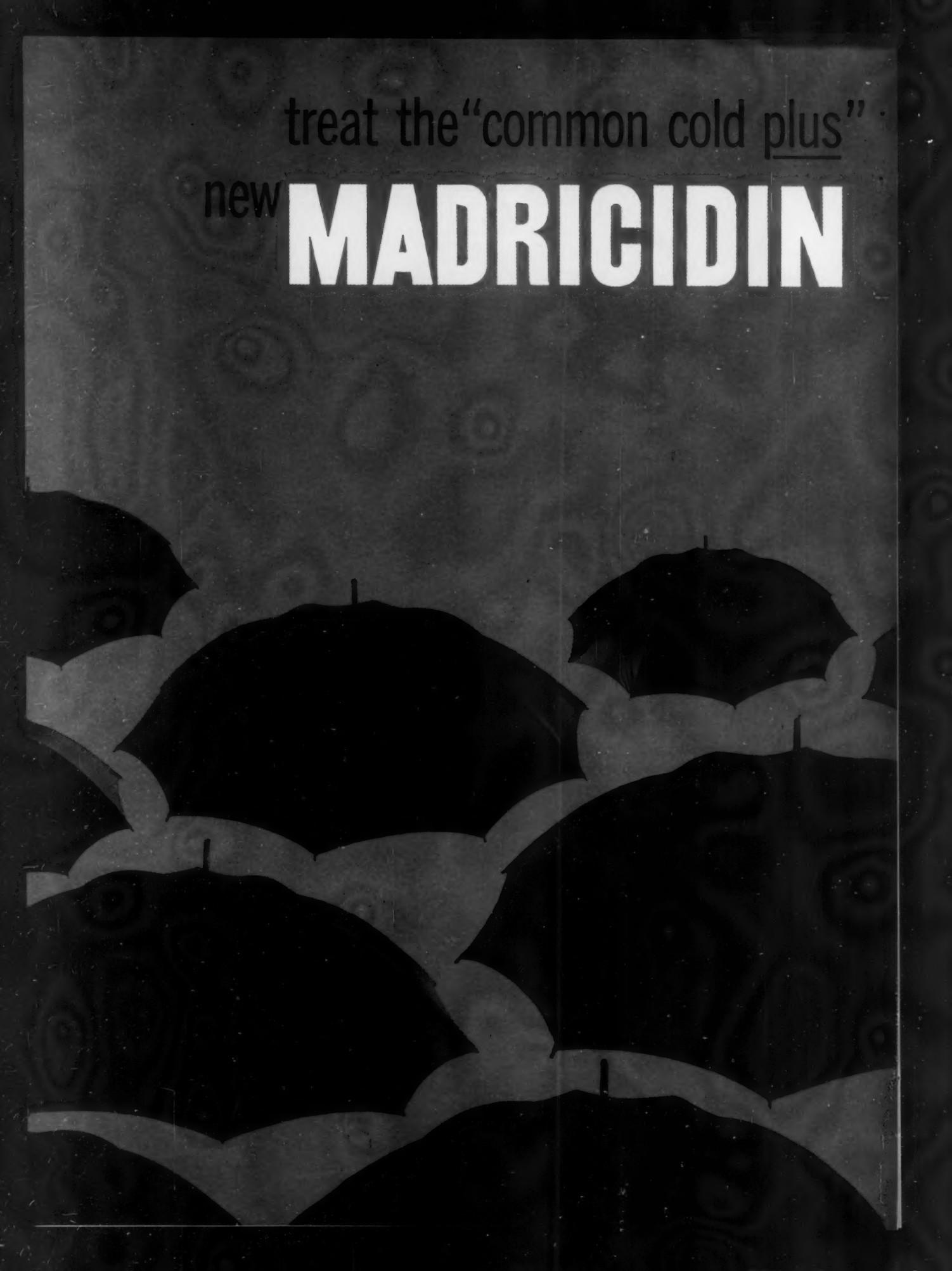
**SUPPLIED:** Singoserp Tablets, 1 mg. (white, scored); bottles of 100. Samples available on request.  
Write to CIBA, Box 277, Summit, N.J.

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treat the "common cold plus"

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# MADRICIDIN



# prompt symptomatic relief plus defense against secondary invaders

provides these therapeutic actions:

## PREVENTS SECONDARY BACTERIAL INFECTIONS

Madrilon (125 mg per capsule), the low dosage sulfonamide, avoids infections which may complicate the common cold

## REDUCES FEVER AND RELIEVES HEADACHE

An analgesic-antipyretic, N-acetyl-p-aminophenol (120 mg)...considered the active metabolite of acetophenetidin...reduces fever, relieves headache, myalgia, and other discomforts associated with acute respiratory disorders

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## RELIEVES ALLERGY-LIKE CONGESTIONS

An antihistamine, Thephorin tartrate (10 mg)...with low incidence of side effects, relieves not only allergy-like congestion but also the sneezing and lacrimation which so often accompany respiratory infections

## ALLAYS DROWSINESS AND FATIGUE

A direct-acting physiological stimulant, caffeine (30 mg) helps combat the "dragged out" feeling of the patient with a common cold

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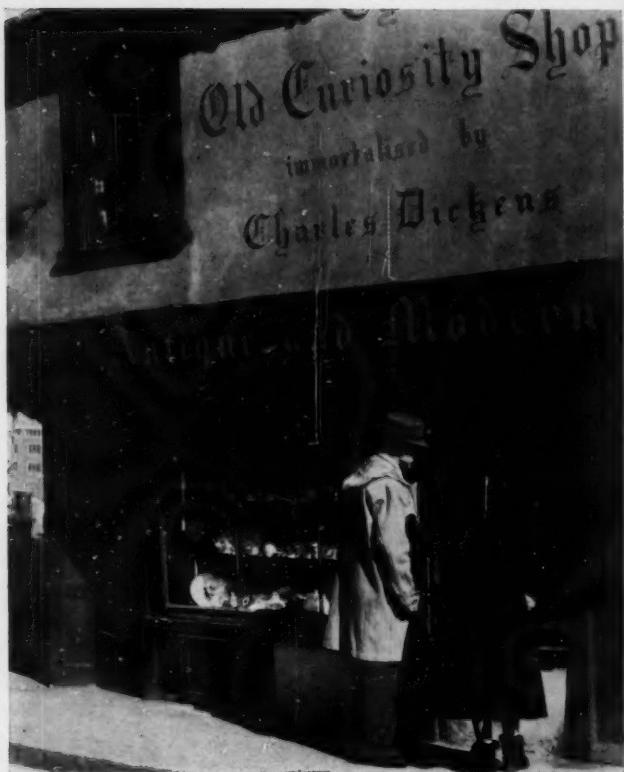


Your choice of travel crossing the Atlantic determines the price of the tour. Complete rates for either tour are as follows: first class steamship accommodations, \$1835; cabin class steamship accommodations, \$1595; first class air travel, \$2050; economy class air travel, \$1611.

### Tour Operators

The two Family Physician Tours are operated by Special Interest Tours, Inc., an organization with long experience in setting up travel programs for special groups. They will be glad to send you complete itineraries of the tours and to answer any questions you may have. But get your letter off right away. The European season will be here before you know it.

*Travel continued on page 158a*



156a



Top: St. Paul's, site of the tombs of Nelson, Wellington and Christopher Wren, the cathedral's creator. Above: A Beefeater standing guard at the Tower of London. No guards, but a large collection of Dickens' first editions awaits the visitor to the Old Curiosity Shop.

BTA Photos



## lets your stopped-up patient breathe again

Of the more than 200 nasal preparations available today only Biomydrin Nasal Spray contains an exclusive mucolytic agent which speeds the medication to affected tissue sites. Biomydrin is anti-inflammatory, anti-infective and decongestant — opens air passages, lets stopped-up patients *breathe* again — with no tolerance, no sensitization, no rebound congestion.

**Biomydrin®**  
*nasal spray/drops*

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TRAVEL

## On the Road in Trinidad



Rentals of cars at moderate rates now makes possible leisurely unplanned excursions on Trinidad and Tobago. The larger island, Trinidad, has more than 2000 miles of asphalt roads.

Visitors in Trinidad have traditionally done their sightseeing by taxicab, complete with licensed driver-guide and hired by the hour or the day, since the island has no organized bus tours. Now, however, with travelers staying longer and with greatly-improved and extended roads, it is feasible to rent a drive-yourself car for more comprehensive sightseeing at lower cost, according to the Trinidad and Tobago Tourist Board.

The same thing holds true for Trinidad's smaller sister island, Tobago, where a fleet of Volkswagens is available for hire by day or week and makes possible visits to outlying beaches and remote but picturesque fishing villages.

Formalities and rules of the road are simple. The visitor can arrange in advance, through his travel agent or when making his hotel reservation, to have a car waiting at his hotel. Upon arrival in Trinidad or Tobago, he presents his U.S. driving license to the licensing authorities, takes a quick test to prove that he is acquainted with the signs and understands the principle of driving on the left (a la Great Britain), and receives a local permit good for three months.

Total costs will be: \$3 for the license, \$8 per day or \$53 per week for the car. A deposit of \$23 is required on the car, and mileage up to 100 miles per day is covered by the fee;

*Continued on page 162a*



while they are planning  
their family

they need your help  
more than ever



the most widely prescribed contraceptive

WHENEVER A DIAPHRAGM IS INDICATED



**asthmatic...but symptom-free** All day long, on the job or off, Tedral protects most asthmatic patients from bronchospasm, mucous congestion and the fear and embarrassment of recurrent seizures. One Tedral tablet, taken at the first sign of attack, blocks the acute phase. For prophylaxis, most patients can be effectively, safely *and economically* maintained in symptom-free security on just 1 or 2 Tedral tablets q.i.d.

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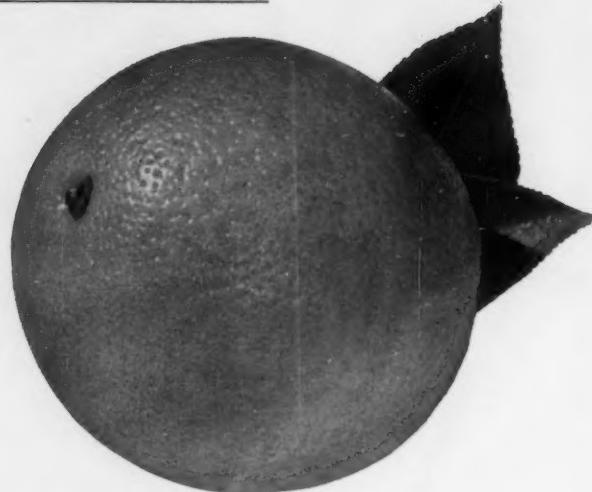
*the dependable antiasthmatic*

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Key to effective treatment  
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Diarrheas...dysenteries...many other intestinal disorders...respond quickly and favorably to treatment with pharmaceutical specialties whose key ingredient is a citrus pectin or derivative *in adequate dosage*.

Exchange Brand Pectin N.F. will provide a dependable therapeutic dosage of galacturonic acid—the recognized detoxicating factor in the pectin.

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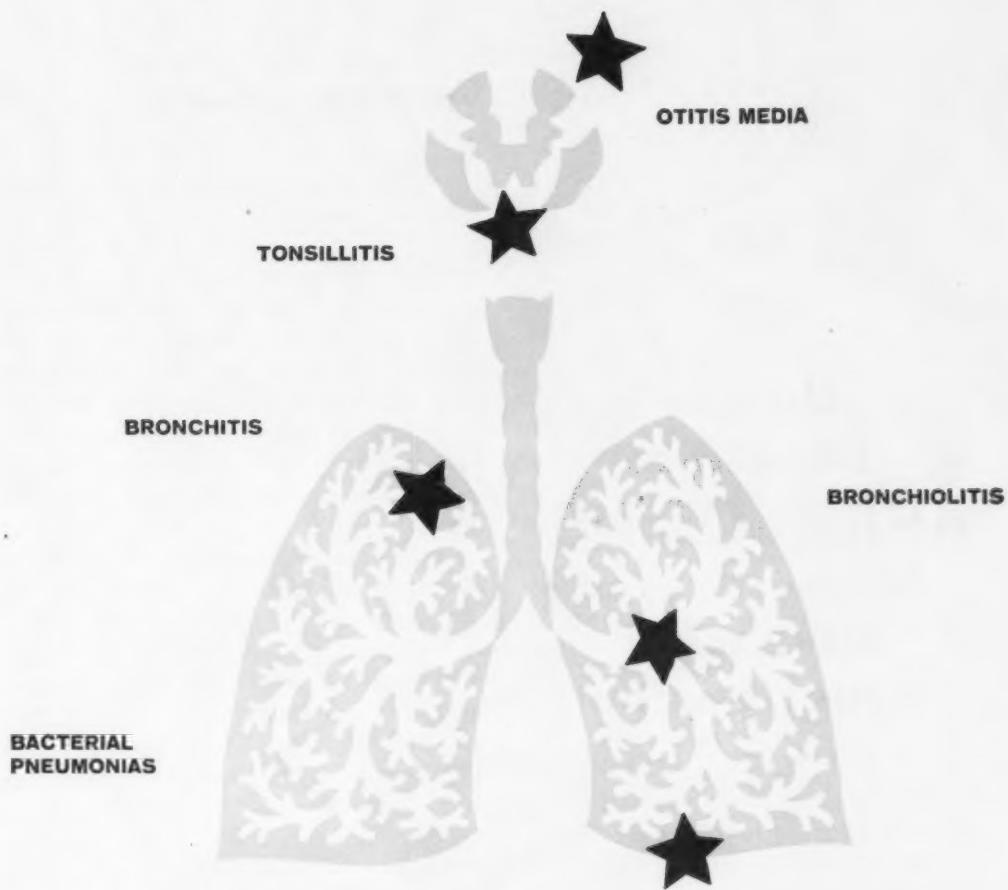
derivatives widely used in therapeutic specialties include:

PECTIN N.F.; PECTIN CELLULOSE COMPLEX; POLYCALACTURONIC, GALACTURONIC ACIDS.

These are available to the medical profession in specialties of leading pharmaceutical manufacturers. Literature and up-to-date bibliography available from Sunkist Growers, Pharmaceutical Division. Address: 720 E. Sunkist Street, Ontario, California.

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#### FEWER TREATMENT FAILURES IN RESPIRATORY TRACT INFECTIONS

*“...outstanding advantages over many previously accepted chemotherapeutic and antibiotic agents”<sup>1</sup>*

# ALTAFUR®

BRAND OF FURALTADONE

*effective perorally against the majority  
of common infections caused by pathogenic bacteria  
including the antibiotic-resistant staphylococci*

ALTAFUR is available in tablets of 250 mg. (adult) and 50 mg. (pediatric), bottles of 20 and 100.

1. Lysaught, J. N., and Cleaver, W.: Proceedings of the Detroit Symposium on Antibacterial Therapy (Michigan and Wayne County Academies of General Practice, Detroit, Sept. 12, 1959).

THE NITROFURANS . . . a unique class of antimicrobials

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**Unique  
benefit of  
APRESOLINE®  
helps reverse  
advancing  
hypertension**

Apresoline contributes an exclusive action to the antihypertensive program: It is the only therapeutically acceptable agent to increase renal blood flow and relax cerebral vascular tone while it lowers blood pressure. With improved kidney function, advancing hypertension can often be halted—or even reversed.

Apresoline is indicated for moderate to severe and malignant hypertension, renal hypertension, acute glomerulonephritis, and toxemia of pregnancy.

When less potent drugs are not fully effective, when renal function must be improved, Apresoline is a logical prescription. Except in rare instances side effects are not a serious problem when the recommended maximal daily dosage (400 mg.) is not exceeded.

**SUPPLIED:** Tablets, 10 mg., 25 mg., 50 mg.

APRESOLINE® hydrochloride  
(hydralazine hydrochloride CIBA)

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C I B A  
SUMMIT, N. J.

for any additional mileage a fee of 7 cents per mile is payable.

**Asphalt Roads**

Trinidad has more than 2000 miles of good roads, surfaced with asphalt from her own famous Pitch Lake, and all of them lead to Port of Spain. It might be well for the visitor to practice his rules of the road by spending a day or two in short drives within the city and its environs, returning to his hotel each night.

Among the beauty spots close to the city are Mount St. Benedict with its monastery 800 feet above sea level; Lady Chancellor Hill for a lovely panorama of the city and harbor; Blue Basin with its waterfall and cool natural pool where one can swim; the Laventille Hills and the lovely chapel of Our Lady of Laventille, from whose tower really spectacular views can be had; Fort George; and of course Maracas Bay with its fine beach, an excursion which can be combined with drives over The Saddle and the North Coast Road, Trinidad's "skyline drive," to see lovely tropical scenery and spacious views. Other interesting excursions out of the city include a drive on the Western Main Road past Cocorite and Point Cumana to little fishing villages like St. Peter's and Carenage with their views of the Five Islands, especially recommended at sunset, and the

*Continued on page 164a*

**TO OUR READERS:** You are avid travelers—as statistics show—taking trips for pleasure and relaxation as well as to attend professional meetings in this country and abroad. In addition, you often prescribe travel for your patients. Thus, the purpose of this department is to give you concise, practical information about one of your strong interests—travel. As a special service, this section will carry each month a calendar of important forthcoming national and international medical meetings.



## When blood pressure must come down

When you see symptoms of hypertension such as dizziness, headache, and fainting your patient is a candidate for Serpasil-Apresoline. Even when single-drug therapy fails, Serpasil-Apresoline frequently can bring blood pressure down to near-normal levels, reduce rapid heart rate, allay anxiety.

**SUPPLIED:** Tablets #2 (standard-strength, scored), each containing 0.2 mg. Serpasil and 50 mg. Apresoline hydrochloride; Tablets #1 (half-strength, scored), each containing 0.1 mg. Serpasil and 25 mg. Apresoline hydrochloride.

**SERPASIL®-APRESOLINE®**

hydrochloride (reserpine and hydralazine hydrochloride ciba)

CIBA  
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Trinidad and Tobago Tourist Board  
East mingles with West in Trinidad, where one-third of population is Hindu or Moslem. Sari-clad Indian girl poses in front of Hindu temple.

Morne Coco Road through the hills north of the city.

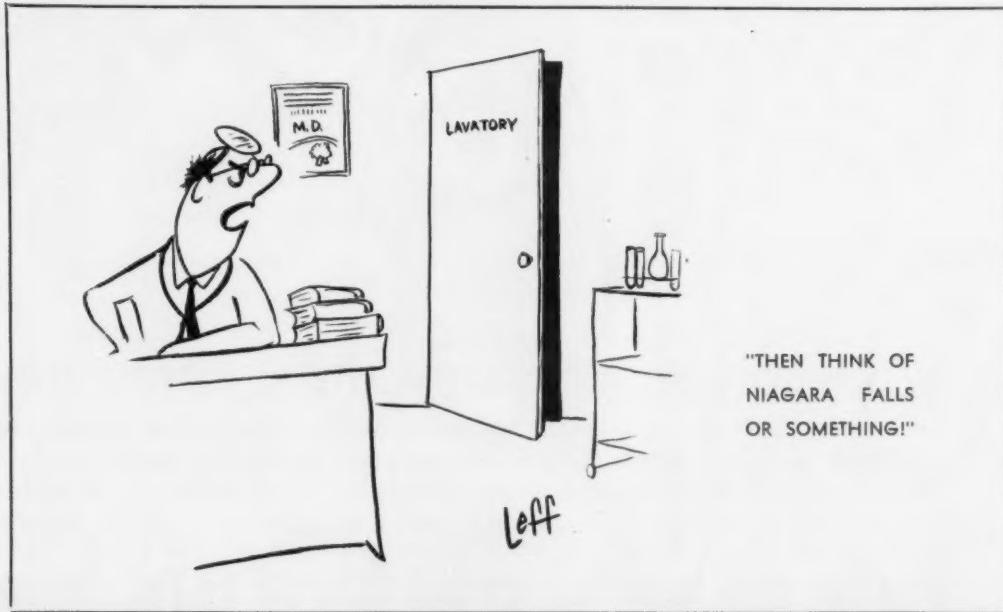
### Second City

San Fernando, Trinidad's second largest city, is a good base for the next two or three days of exploration in the southern part of the island. On the way from Port of Spain via the Churchill-Roosevelt and Princess Margaret Highways and the Southern Main Road, one passes through many rice paddies and sugar cane fields. The village of St.

Joseph was Trinidad's first capital, established by Antonio Cedeno of Spain, and the Caroni River is really Trinidad's river of history, up which sailed both Cedeno and Sir Walter Raleigh, among others.

Couva is a village of East Indians, where lovely hand-made jewelry can be bought. At Claxton Bay, where a large cement factory is located, a new hotel with swimming pool will be opened by March 1960, and if one is interested in visiting oil fields, sugar refineries or the cement factory, this will be a convenient stopping point.

*Continued on page 170a*



# Tofrānil®

brand of imipramine HCl

In the treatment of depression Tofrānil has established the remarkable record of producing remission or improvement in approximately 80 per cent of cases.<sup>1-7</sup>

Tofrānil is well tolerated in usage—is adaptable to either office or hospital practice—is administrable by either oral or intramuscular routes.

**Tofrānil  
a potent thymoleptic...  
not a MAO inhibitor.**

**Does** act effectively in *all* types of depression regardless of severity or chronicity.

**Does not** inhibit monoamine oxidase in brain or liver; produce CNS stimulation; or potentiate other drugs such as barbiturates and alcohol.

Detailed Literature Available  
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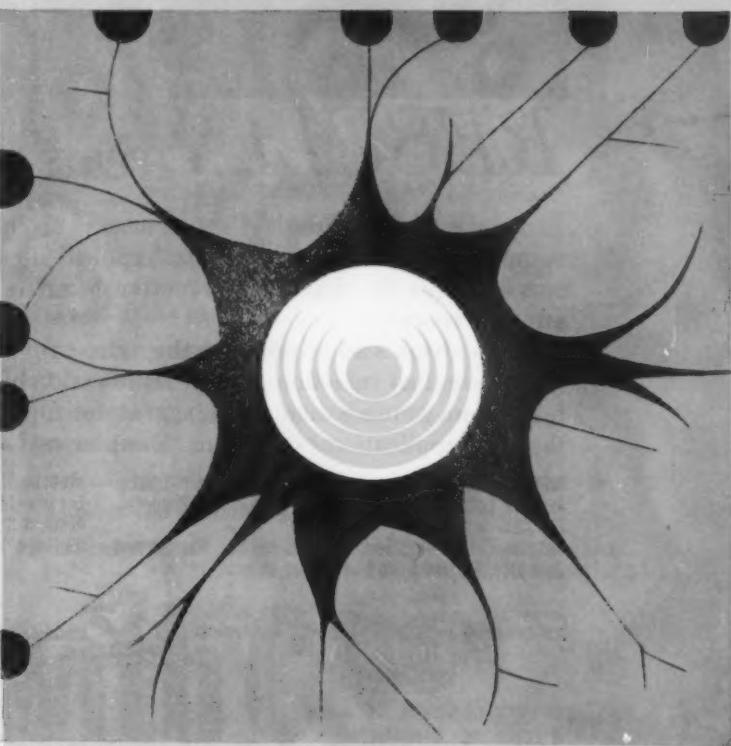
Tofrānil® (brand of imipramine HCl), tablets of 25 mg., bottles of 100. Ampuls for intramuscular administration only, each containing 25 mg. in 2 cc. of solution, cartons of 10 and 50.

*References:* 1. Ayd, E.J., Jr.: Bull. School Med. Univ. Maryland 44:29, 1959. 2. Azima, H., and Vispo, R. H.: A. M. A. Arch. Neurol. & Psychiat. 81:658, 1959. 3. Lehmann, H. E., Cahn, C. H., and de Verteuil, R. L.: Canad. Psychiat. A. J. 3:155, 1958. 4. Mann, A. M., and MacPherson, A. S.: Canad. Psychiat. A. J. 4:38, 1959. 5. Sloane, R. B.; Habib, A., and Batt, U. E.: Canad. M. A. J. 80:540, 1959. 6. Straker, M.: Canad. M. A. J. 80:546, 1959. 7. Strauss, H.: New York J. Med. 59:2906, 1959.

Geigy, Ardsley, New York

# in depression

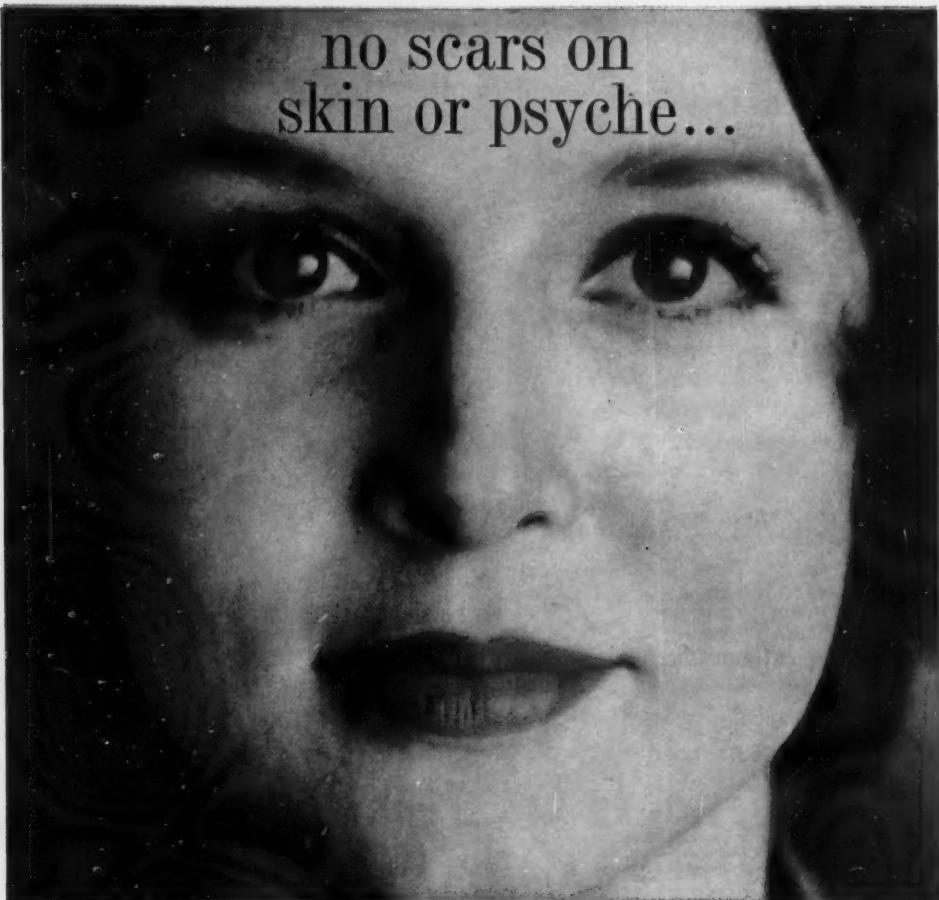
lights the road to recovery  
in 80 per cent of cases



TO 4-60

# Geigy

no scars on  
skin or psyche...



## RESULIN® treats the dual problem

(resorcin and sulfur compounds, Schieffelin)

RESULIN treats your patient's dual acne problem by effectively hiding the "ugly bumps" while it treats the skin. Applied directly to the blemishes, RESULIN concentrates the multiple corrective benefits of resorcin and sulfur at the affected spots.

RESULIN dries and stimulates the skin, provokes moderate exfoliation, and guards against infection. Antipruritic action helps keep fingers away from the face. Your young patients will be grateful for their improved appearance from the first application of RESULIN. *Samples and literature available on request.*

RESULIN® compounds are indicated in all acne conditions.  
RESULIN Lotion, 4 fl. oz. bottles, Blonde and Brunette.  
For severe acne.  
RESULIN Lotion Modified, 4 fl. oz. bottles, Blonde and Brunette. For mild acne or tender skin.

RESULIN Ointment, 1½ oz. tubes, Blonde and Brunette.  
For dry-skin, comedo-type acne.  
RESULIN Soap with Salicylic acid, 4 oz. cakes. For thorough medicated cleansing in all cases.



*Schieffelin & Co./Since 1794* Pharmaceutical Laboratories Division, New York 3



## B-vitamins or ascorbic acid



## saturation doses - the hard way!

Each of these food portions contains a saturation dose of one of the water-soluble B vitamins or C. The easy way to provide such quantities of these vitamins with speed, safety and economy is to prescribe Allbee with C. Recommended in pregnancy, deficiency states, digestive dysfunction and convalescence.

### In each Allbee with C:

	As much as: <sup>*</sup>
Thiamine mononitrate (B <sub>1</sub> ) 15 mg.	6.9 lbs. of fried bacon
Riboflavin (B <sub>2</sub> ) ..... 10 mg.	31½ ozs. of liverwurst
Pyridoxine HCl (B <sub>6</sub> ) ..... 5 mg.	2 lbs. of yellow corn
Nicotinamide ..... 50 mg.	11 ozs. of roasted peanuts
Calcium pantothenate ..... 10 mg.	¼ lb. of fried beef liver
<b>Ascorbic acid (Vitamin C) 250 mg.</b>	<b>¾ lb. of cooked broccoli</b>

\*These common foods are among the richest sources of B vitamins and ascorbic acid. H. A. Wooster, Jr., *Nutritional Data*, 2nd Ed., Pittsburgh, 1954.

# Allbee® with C



A. H. ROBINS COMPANY, INC.  
RICHMOND 20, VIRGINIA

*the beauty  
of these  
antitussives:*



*Dimetane® Expectorant*

*Robitussin®*

*Robitussin® A-C*

*Dimetane® Expectorant-DG*

# they help the cough remove its cause

These elegant antitussives comprise a group of significantly superior expectorants from which you may select the formula best suited for your coughing patient.

First of all, they have more in common than mere delectability to eye and palate: they all include *glyceryl guaiacolate*. This remarkable expectorant aids the coughing mechanism by increasing the secretion of Respiratory Tract Fluid,<sup>1</sup> which helps liquefy sputum,<sup>1,3</sup> makes bronchial and tracheal cilia more efficient,<sup>1,2</sup> and acts as a demulcent.<sup>1,3,5</sup> Through its effects, all four expectorants promote the natural purpose of the cough, which is to remove the irritants that cause it.<sup>1,2</sup>

In addition, the Robins antitussive armamentarium provides a choice of widely accepted drugs in various combinations with *glyceryl guaiacolate* for treating different kinds of coughs and associated symptoms. For antihistaminic effects, there is Dimetane® or prophenyridamine; for bronchodilation and nasal decongestion, there are sympathomimetic agents; and for suppression of the "too frequent" cough, there is codeine or dihydrocodeinone.

*References:* 1. Cass, L. J., and Frederik, W. S.: Am. Pract. & Digest Treat. 2:844, 1951. 2. Blanchard, K., and Ford, R. A.: Journal-Lancet 74:443, 1954. 3. Hayes, E. W., and Jacobs, L. S.: Dis. Chest 30:441, 1956. 4. Blanchard, K., and Ford, R. A.: Rocky Mountain M. J., Vol. 52, No. 3, 1955. 5. Boyd, E. M., and Pearson: Am. J. M. Sc. 211:602, 1946. A. H. ROBINS COMPANY, INC., RICHMOND 20, VIRGINIA



Each teaspoonful contains:  
Glyceryl guaiacolate ..... 100 mg.



Each teaspoonful contains:  
Glyceryl guaiacolate ..... 100 mg.  
Prophenyridamine maleate .. 7.5 mg.  
Codeine phosphate ..... 10 mg.  
(exempt narcotic)

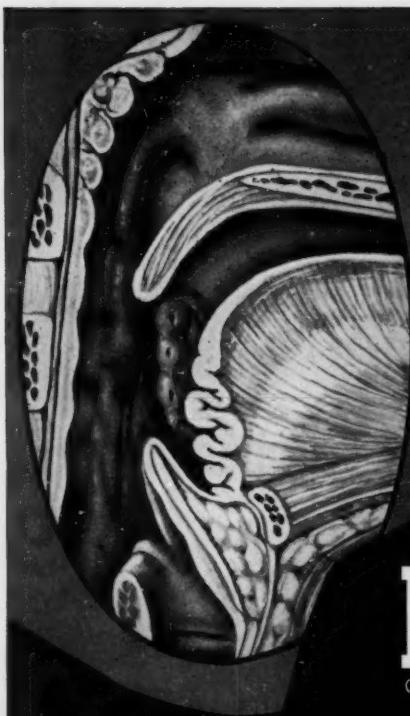


Each teaspoonful contains:  
Parabromdylamine maleate  
(DIMETANE) ..... 2 mg.  
Glyceryl guaiacolate ..... 100 mg.  
Phenylephrine HCl, USP ..... 5 mg.  
Phenylpropanolamine HCl,  
NNR ..... 5 mg.



Each teaspoonful contains the  
Dimetane Expectorant for-  
mula plus Dihydrocodeinone  
bitartrate, NF ..... 1.8 mg.  
(exempt narcotic)





A NEW APPROACH  
in treatment of  
**"CHRONIC  
SORE THROAT"**

often evidenced as chronic tonsillitis; glandular or hypertrophic pharyngitis

... without the penalties  
of antibiotics or sulfonamides

**BISTRIMATE<sup>®</sup>**

(bismuth sodium triglycollamate)<sup>†</sup>

Smith

**DRAMATIC RESULTS IN CASES RESISTANT TO OTHER THERAPY**

**14 INDEPENDENT CLINICAL STUDIES PROVED  
BISTRIMATE EFFECTIVE IN 89.1%  
OF 395 PATIENTS WITH "CHRONIC SORE THROAT"**

BISTRIMATE—a unique bismuth salt, orally produces therapeutically effective systemic bismuth levels. Use of oral BISTRIMATE is safe, convenient and economical... eliminates injections. Emergence of antibiotic-resistant pathogens is prevented...with full freedom from antibiotic sensitization.

**DOSAGE:** In adults, 1 tablet t.i.d. for 2 or 3 days, then 1 or 2 tablets t.i.d. for a period of 7 to 10 days. In many patients excellent results are often obtained in less than 7 to 10 days.

**SUPPLIED:** Bottles of 100 and 1000 tablets. Each white scored tablet contains bismuth sodium triglycollamate 410 mg. (equivalent to 75 mg. elemental bismuth).

Literature and samples available on request.

† U.S. Patent No. 2,348,984



**Smith, Miller & Patch, Inc.**

FINE PHARMACEUTICALS

902 BROADWAY, N.Y. 10



In eczematous dermatitis with secondary infection CREME AND LOTION pH 5.0

## COR-TAR-QUIN™

DOME

ACID MANTLE® • HYDROCORTISONE • STAINLESS TAR • DIODOHYDROXYQUINOLINE

COR-TAR-QUIN is especially effective in those dermatoses where an inflammatory reaction is accompanied by increased scaling, lichenification, and secondary infection.

Combined hydrocortisone-coal tar therapy produces an enhanced antipruritic, anti-inflammatory response and diiodohydroxyquinoline is fungicidal as well as bactericidal. The Acid Mantle creme base of COR-TAR-QUIN helps restore and maintain normal pH of the skin. Relief is prompt and lasting.

**Sig:** Apply b.i.d. ½ oz., 2 oz., and 4 oz. tubes with either 0.5% or 1.0% hydrocortisone

*also available without the stainless tar, as CORT-QUIN™ CREME pH 4.5*

A MOST TRUSTED NAME IN DERMATOLOGICALS  
**DOME CHEMICALS INC.**

125 West End Avenue, New York 23, N. Y.  
665 N. Robertson Blvd., Los Angeles 46, Cal.  
2765 Bates Road, Montreal, Canada



Among the excursions out of San Fernando, the one which attracts most visitors is Pitch Lake. It isn't a beauty spot by any means—it has been described as a "magnified elephant-skin"—but as one of the natural wonders of the world it is certainly worth seeing. Sir Walter Raleigh tarred his boats here, and famed boulevards of the world are surfaced with Trinidad asphalt. Get one of the locals to tell you some of the fantastic legends and equally fantastic true stories about Pitch Lake.

Other points of interest near San Fernando include a miniature desert called the Devil's Woodyard, where peculiar mud volcanoes occur. One can travel on to Moruga for a swim, and visit some interesting villages like Princes Town, Indian Walk, Hindustan, Penal andDebe. Nearby also is Usine St. Madeleine, huge sugar refinery.

### Swimming, Hunting

From San Fernando, the road leads to the East for another stay of several days using Mayaro Bay's comfortable Atlantis Beach

### TRAVEL NOTES

- For travel abroad: Loss of your passport should be reported at once to the nearest U. S. consular office, or direct to the Passport Office, Department of State, Washington, D. C., with full details. Remember, this is the most important document you take with you abroad.

- Three-day package trips into West Berlin can now be booked from Cologne, Duesseldorf, Frankfurt, Hamburg, Hanover and Munich, according to an announcement by the Berlin Tourist Office. Fares, from \$27 to \$47, depending on the city of departure, include hotel accommodations for two nights (with breakfast), sightseeing and plane travel.



Hotel as base. Here are fine white sand beaches for miles along the Atlantic, and at low tide one can drive right on the beaches of both Mayaro and Cocos Bays and see the caves which are ordinarily under water. Fishing, swimming, hunting trips into the Northern Range and just general relaxation are attractions here. One can even drive to the very northeastern-most tip of the island (or make this trip from Port of Spain) to the lighthouse at Galera Point, stopping for swimming and beautiful views at Manzanilla Point, Matura Bay, Balandra Bay, Cumana Bay, Petit Trou or fishing villages with such interesting names as Redhead, Toco, Sans Souci and Matelot.

Returning to Port of Spain, one can take the very interesting route through original Carib Indian territory with a stop at Arima, one of the oldest Carib settlements on the island. The Carib Queen lives here, and there are many other points of interest in the old town, where the Santa Rosa Festival is held every August. Or, between mid-January and mid-March, when the gorgeous Immortelle trees are in full bloom, the road through Rio Claro and the Central Range should be chosen for at least part of the trip.

*Travel continued on page 172a*

"The larger the therapeutic range...the  
more desirable the preparation...  
[GITALIGIN]...possesses a greater range."\*

WIDER  
SAFETY  
MARGIN

# GITALIGIN®†

"...possesses a greater range."\*

GITALIGIN provides a maximum degree of control in cardiac therapy by reason of these distinctive clinical features:\*\*



WIDER SAFETY MARGIN

GREATER THERAPEUTIC RANGE

FASTER RATE OF

ELIMINATION THAN DIGITOXIN

OR DIGITALIS LEAF

It's easy to transfer patients to GITALIGIN  
*-without interruption-*

0.5 mg. Gitaligin is approximately equivalent to 0.1 Gm.  
digitalis leaf, 0.1 mg. digitoxin, and 0.5 mg. digoxin.

Supplied: 0.5 mg. scored tablets—in bottles of 30 and 100.

\*Batterman, R. C.: Observations on the Clinical Use  
of Digitalis, in Diamond, E. G.: Digitalis, Springfield,  
Charles C Thomas, 1957.

\*\*Bibliography available on request.

†White's brand of amorphous gitalin.



WHITE LABORATORIES, INC.  
KENILWORTH, NEW JERSEY



**IN CHRONIC BRONCHITIS,  
ASTHMA AND EMPHYSEMA**

# **CHOLEDYL®**

brand of oxtriphylline

*bettters breathing, forestalls the crisis*

Choledyl—the choline salt of theophylline—improves pulmonary function, betters breathing, forestalls the crisis...is basic in any prophylactic regimen. A pure bronchodilator, Choledyl is free of sedative and sympathomimetic effects...Choledyl produces up to 75% higher theophylline blood levels than does oral aminophylline...does not cause gastric irritation or drug fastness...is ideal for long-term use. Usual adult dose: 200 mg. q.i.d.



A listing of important national  
and international medical conferences



## **Calendar of Meetings**

### **FEBRUARY**

**Miami Beach, Fla.** American College of Allergists, Feb. 28-Mar. 5. Contact: Mr. Elio Bauers, 2160 Rand Tower, Minneapolis 2, Minn.

### **MARCH**

**Nassau, Bahamas.** First Bahamas Allergy Conference, Mar. 5-12. Contact: Dr. B. L. Frank, P. O. Box 4037, Fort Lauderdale, Fla.

### **APRIL**

**New York, N. Y.** International Anatomical Congress, April 11-16. Contact: Dr. D. W. Fawcett, Dept. of Anatomy, Cornell University Medical College, 1300 York Avenue, New York 21, N. Y.

**San Francisco, Calif.** American College of Physicians, April 4-9. Contact: Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Pa.

**Nassau, Bahamas.** Bahamas Medical Conference, April 1-14. Contact: Dr. B. L. Frank, P. O. Box 4037, Fort Lauderdale, Fla.

### **MAY**

**Geneva, Switzerland.** World Health Assembly,

*Concluded on page 174a*

when creepers  
become toddlers  
it's time  
to change them to  
**Vi-Sol**<sup>TM</sup>  
chewable tablets  
or teaspoon vitamins

Vi-Sol chewable tablets and teaspoon vitamins, specifically formulated for the child over two, are the logical continuation of vitamin supplementation at the end of the "baby" period.

They'll know a good thing when you prescribe...  
**DECA-VI-SOL**,® 10 significant vitamins,  
**POLY-VI-SOL**,® 6 essential vitamins.

**Chewable tablets** with fruit-like flavors, dissolve easily in the mouth... no swallowing problem... no vitamin aftertaste or odor... no carbohydrates which tend to promote dental caries.

**Teaspoon vitamins**, delicious, orange flavored, that children take readily.



**Mead Johnson**

*Symbol of service in medicine*

EVANSTON, ILLINOIS

B7260



**TRAVEL**

May 3. *Contact:* World Health Organization, Palais des Nations, Geneva.

**Rome, Italy.** Congress of the International College of Surgeons, May 15-18. *Contact:* Dr. Max Thorek, 850 W. Irving Park Rd., Chicago, Ill.

**Mexico City, Mex.** Pan-American Medical Association Congress, May 2-11. *Contact:* Dr. Joseph J. Eller, 745 Fifth Avenue, New York 22, N. Y.

**JUNE**

**Miami Beach, Fla.** American Medical Association, Annual Meeting, June 13-17. *Contact:* Dr. F. J. L. Blasingame, 535 North Dearborn St., Chicago 10, Ill.

**JULY**

**Stockholm, Sweden.** International Congress Against Alcoholism, July 31-Aug. 5. *Contact:* Dr. Archer Tongue, Case Gare 49, Lausanne, Switzerland.

**New York, N. Y.** International Congress on Occupational Health, July 25-29. *Contact:* Dr. Leo Wade, 15 West 51st St., New York N. Y.

**Bahia, Brazil.** Pan-American Tuberculosis Congress, July 10-14. *Contact:* Prof. Fernando D. Gomez, 26 de Marzo, 1065, Montevideo, Uruguay.

**AUGUST**

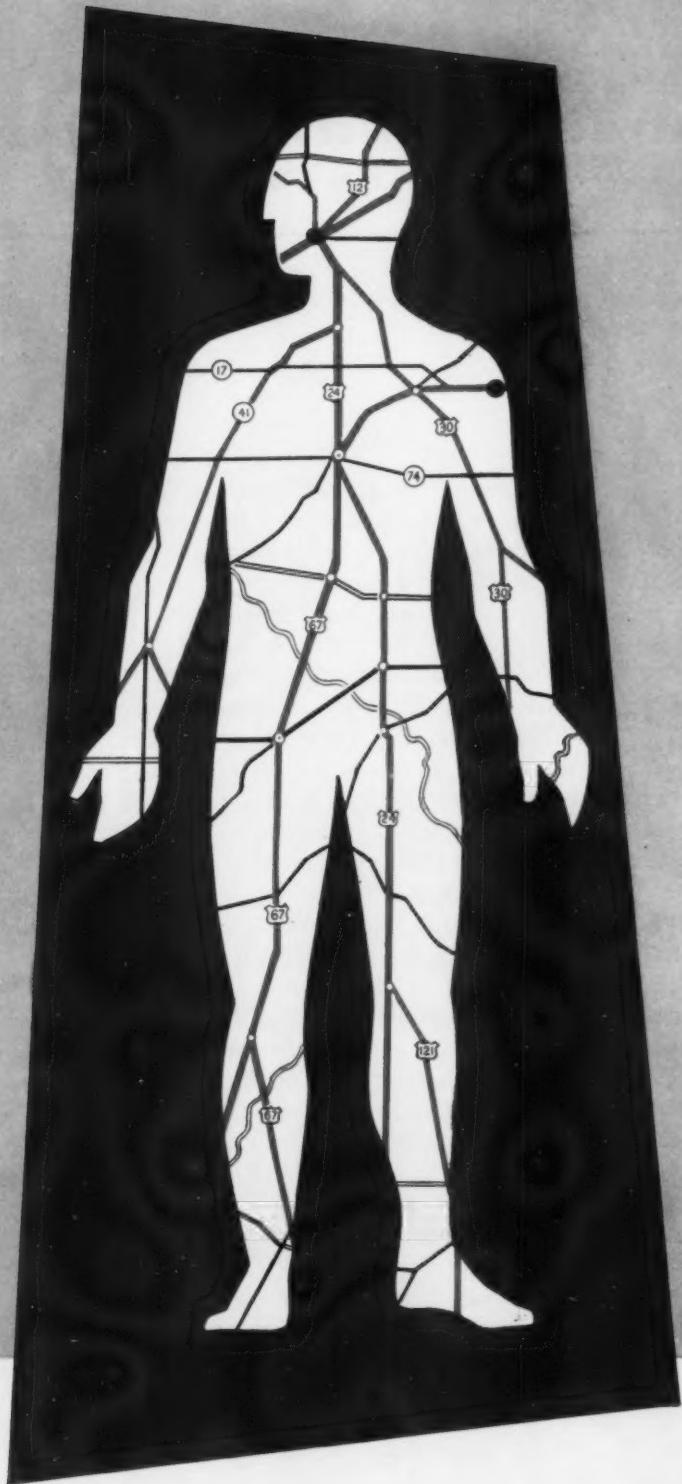
**Basle, Switzerland.** International Congress of Internal Medicine, Aug. 24-27. *Contact:* Secretariat, Sixth International Congress for Internal Medicine, 13, Steinendorfstrasse, Basle, Switzerland.

senile  
vaginitis reflects a lack of  
estrogen stimulation due to decreasing ovarian function  
during the postmenopausal period and  
responds to local estrogen  
stimulation which restores the vulnerable, atrophied  
vaginal mucosa to a more normal, healthy state  
that resists irritation...and lowers vaginal pH...  
through the application of  
**"Premarin"®**  
**Vaginal Cream**

"Premarin"® conjugated estrogens (equine)

 **AYERST LABORATORIES**, New York 16, N. Y. Montreal, Canada

faster  
healing  
at any location



# CHYMAR®

*Buccal/ Aqueous/ Oil*

*superior anti-inflammatory enzyme*

**controls inflammation,  
swelling and pain**

Chymar averts or rapidly reduces objective and subjective signs of inflammation of all types. It dissipates edema and hematoma, improves local circulation, reduces pain and accelerates healing. Side effects that have been observed with steroid-type anti-inflammatory agents do not occur with Chymar.

thrombophlebitis	pelvic inflammatory disease
cellulitis	biopsies
asthma	ulcerations
bronchitis	peptic ulcers
sinusitis	dermatoses
burns	conjunctivitis
bruises	uveitis
sprains	
fractures	

**CHYMAR Buccal** Crystallized chymotrypsin in a tablet formulated for buccal absorption. Bottles of 24 tablets. Enzymatic activity, 10,000 Armour Units per tablet.

**CHYMAR Aqueous** Solution of crystallized chymotrypsin in sodium chloride injection for intramuscular use. Vials of 5 cc. Enzymatic activity, 5000 Armour Units per cc.

**CHYMAR** Suspension of crystallized chymotrypsin in oil for intramuscular injection. Vials of 5 cc. Enzymatic activity, 5000 Armour Units per cc.

ARMOUR PHARMACEUTICAL COMPANY • KANKAKEE, ILLINOIS

*Armour Means Protection*





## MODERN THERAPEUTICS

New therapies and significant clinical investigations abstracted from other journals.

### Some Unusual Cases of Cerebral Tuberculosis

"Tuberculosis meningitis is still fairly common in this country although its incidence is declining, as are tuberculous infections in general. The younger age groups are generally thought to be more prone to this variety of the disease, and we tend to forget that it may occur at any age. Also, in adults, meningitis is so often one of the late developments of pulmonary tuberculosis that the latter condition alerts us to the former as soon as symptoms referable to the central nervous system make their appearance.

As has been pointed out by O'Connor the age group of patients admitted to tuberculosis hospitals has been undergoing a great shift. The majority are now over the age of 40 years and 20 per cent are over 60. This has occurred because the younger age groups are being better screened and isolated. The older age groups are not being checked frequently since they are generally missed by such programs as industrial surveys, school screenings, et cetera. Thus they remain a significant untreated reservoir of the disease.

O'Connor also remarks that many of the infections in the geriatric patients are apparently a recent acquisition and not a relapse of an old process. This may perhaps explain the situation encountered in the patients under discussion. Tuberculomas and meningitis are not at all infrequent in the young with recent onset

of the disease. The geriatric patient simulates the child in so many ways that pursuing the same course with a tuberculous infection really should not seem unusual.

A great deal has been written in recent years regarding the surgery of intracranial tuberculomas. Excision, followed by intensive antibiotic therapy, is now recognized as the treatment of choice. While neurosurgeons have had much to say about the cases that have been diagnosed antemortem, they write little about those that have not been so localized. In the United States, the incidence of tuberculomas excised in relation to brain tumors is between 1 and 2 percent. In Chile, an incidence of 15.9 percent is mentioned, in Panama 8 percent, and in North Africa "very high." All these authors point out that the disorder is more common in the "native" population, which, I take it, means in contradistinction to stock derived from European ancestry. Its relative infrequency in the United States, even when the symptoms of an intracranial mass are present, may fail to alert us to the possibility of a tuberculoma before operation is undertaken.

The patients under discussion were all advanced in the course of their disease by the time treatment was undertaken. All had "negative" chest x-rays which delayed the process of arriving at the proper diagnosis. None were operated upon since their principal lesions

*Continued on page 180a*

**YESTERDAY, A COUGH SPOILED HIS DRAWING  
TODAY HIS COUGH IS UNDER CONTROL  
WITH**

# **BENYLIN<sup>®</sup> EXPECTORANT**

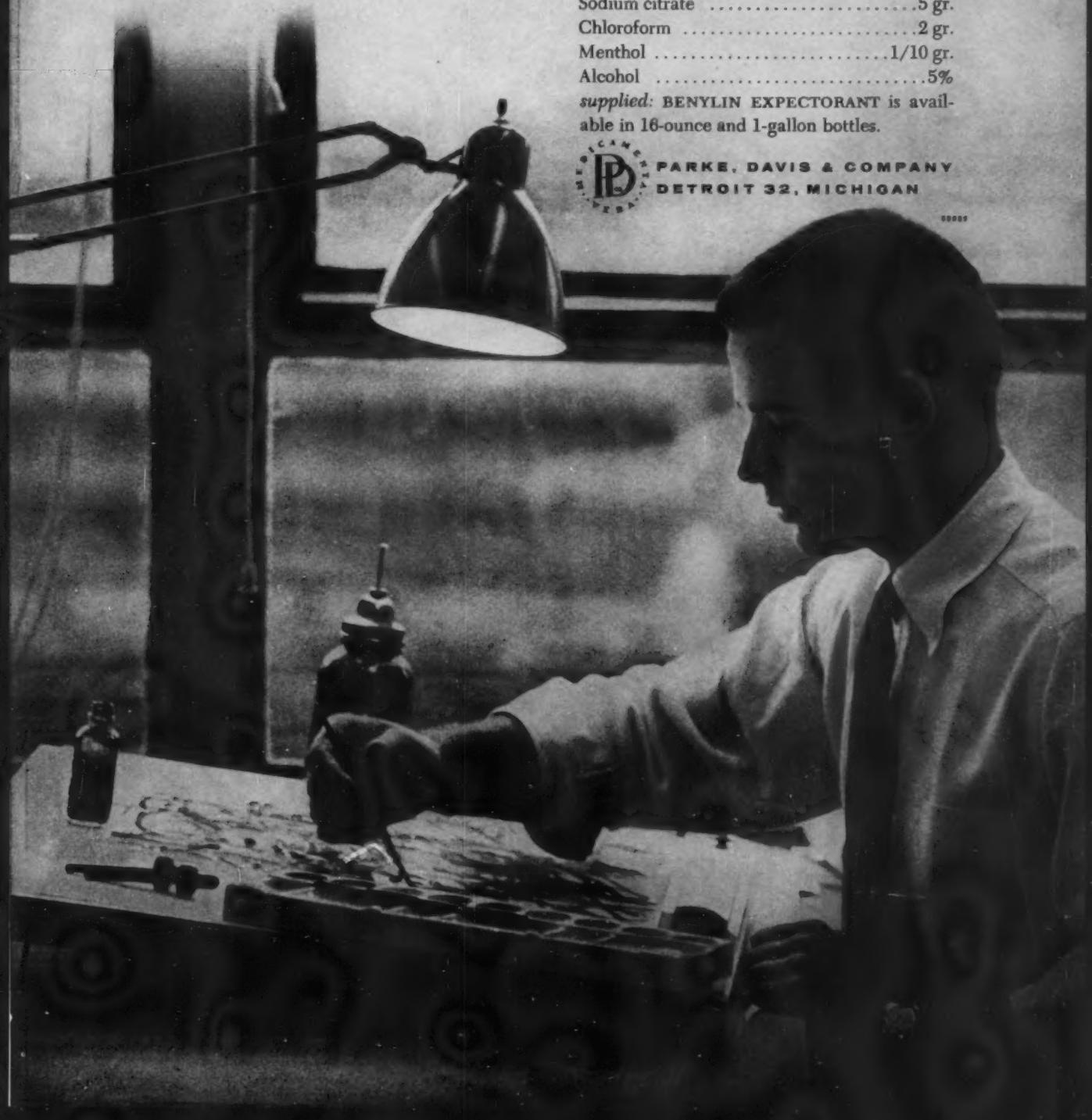
BENYLIN EXPECTORANT contains in each fluidounce:

Benadryl <sup>®</sup> hydrochloride (diphenhydramine hydrochloride, Parke-Davis) . . . . .	80 mg.
Ammonium chloride . . . . .	12 gr.
Sodium citrate . . . . .	5 gr.
Chloroform . . . . .	2 gr.
Menthol . . . . .	1/10 gr.
Alcohol . . . . .	.5%

*supplied:* BENYLIN EXPECTORANT is available in 16-ounce and 1-gallon bottles.

  
**PARKE, DAVIS & COMPANY  
DETROIT 32, MICHIGAN**

69089



*control the tension—treat the trauma*



# ...Pathibamate® 400 200

meprobamate with PATHILON® tridihexethyl chloride Lederle

*greater flexibility in the control of tension, hypermotility  
and excessive secretion in gastrointestinal dysfunctions*

**PATHIBAMATE** combines two highly effective and well-tolerated therapeutic agents:

**meprobamate** (400 mg. or 200 mg.) widely accepted tranquilizer and...  
**PATHILON** (25 mg.)—anticholinergic noted for its peripheral, atropine-like action, with few side effects.

The clinical advantages of PATHIBAMATE have been confirmed by nearly two years' experience in the treatment of duodenal ulcer; gastric ulcer; intestinal colic; spastic and irritable colon; ileitis; esophageal spasm; anxiety neurosis with gastrointestinal symptoms and gastric hypermotility.

Two dosage strengths—PATHIBAMATE-400 and PATHIBAMATE-200 facilitate individualization of treatment in respect to both the degree of tension and associated G.I. sequelae, as well as the response of different patients to the component drugs.

**Supplied:** **PATHIBAMATE-400**—Each tablet (yellow, 1/2-scored) contains meprobamate, 400 mg.; PATHILON tridihexethyl chloride, 25 mg.

**PATHIBAMATE-200**—Each tablet (yellow, coated) contains meprobamate, 200 mg.; PATHILON tridihexethyl chloride, 25 mg.

**Administration and Dosage:** **PATHIBAMATE-400**—1 tablet three times a day at mealtime and 2 tablets at bedtime.

**PATHIBAMATE-200**—1 or 2 tablets three times a day at mealtime and 2 tablets at bedtime.

Adjust to patient response.

**Contraindications:** glaucoma; pyloric obstruction, and obstruction of the urinary bladder neck.



LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

were relatively silent, both in producing symptoms of intracranial hypertension and in local neurologic deficits. Perhaps excision of the tuberculous masses which must have been spewing bacilli into the cerebrospinal fluid at a vigorous rate might have given the antimicrobial medication a better chance at arresting the infection. The medical therapy undertaken was certainly conspicuous by its inadequacy, which is at variance with the excellent results obtained in youngsters. However, children rarely have sizable intracranial tuberculomas.

While three of the patients reviewed were well advanced in years, they had been in excellent health at the time of onset of symptoms. Post mortem examination failed to disclose any other disease process of significance that could account for their demise. One must therefore assume that tuberculosis alone was responsible and that the patient's own resistance to the active spread of the disease was poor.

In summary, one can only remark that the possibility of all forms of tuberculosis must be considered in the geriatric age group, even in the presence of "negative" chest x-rays. Treatment must be early and vigorous, and surgical excision of tuberculomas of significant size

must be seriously considered, whenever it is applicable."

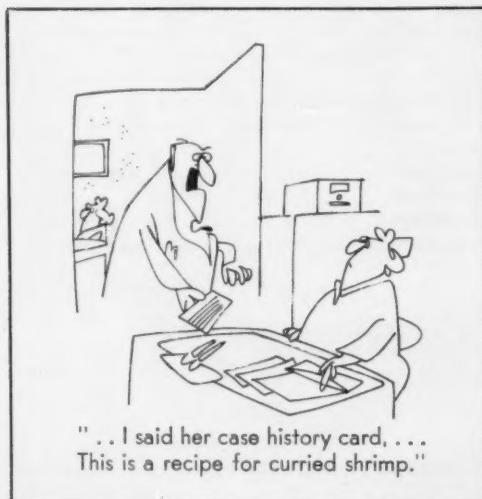
ARTHUR B. KING  
*Bulletin of the Johns Hopkins Hospital* (1959)  
Vol. 104, No. 2, P. 86-88

#### Penicillin Sensitivity in Patients with Burns

"In assessing the incidence of penicillin sensitivity, the first difficulty is correct diagnosis. Where patients are exposed to several possible sensitizing agents, this may be extremely difficult. Skin tests are generally considered to be unreliable (Farmer 1953, Tuft et al. 1955, Feinberg and Feinberg 1956) and penicillin sensitivity may be lost spontaneously (Matthews et al. 1956). Six of our patients with 'penicillin sensitivity' had no reaction to repeat applications within six months; either they must have lost their sensitivity very rapidly, or the reaction was wrongly attributed to penicillin. Similarly, of the 17 patients who gave a history of previous allergy, 7 were exposed to the drug with no reaction.

None of the reactions in these patients endangered life, nor are we aware of any serious reaction during the thirteen years the drug has been used routinely here. Most of the reactions were mild and transient, and some would not have been noted had the review not been in progress. Only a few patients had any appreciable discomfort from the reaction.

Comparing the incidence of reactions in this series with other published results, the reaction-rate after systemic administration (7.4%) is of a similar order to that found by other workers (Lyons 1943, 5.7%; Mayer et al. 1953, 6%; Vickers et al. 1958, 5%). Our incidence after local application only (0.5%) is much lower than other reported figures. Reports of reaction to local therapy have usually been on patients with dermatitis, who are probably particularly susceptible (Kolodny and Denhoff 1946). The present results, in patients without skin disease, show a very low

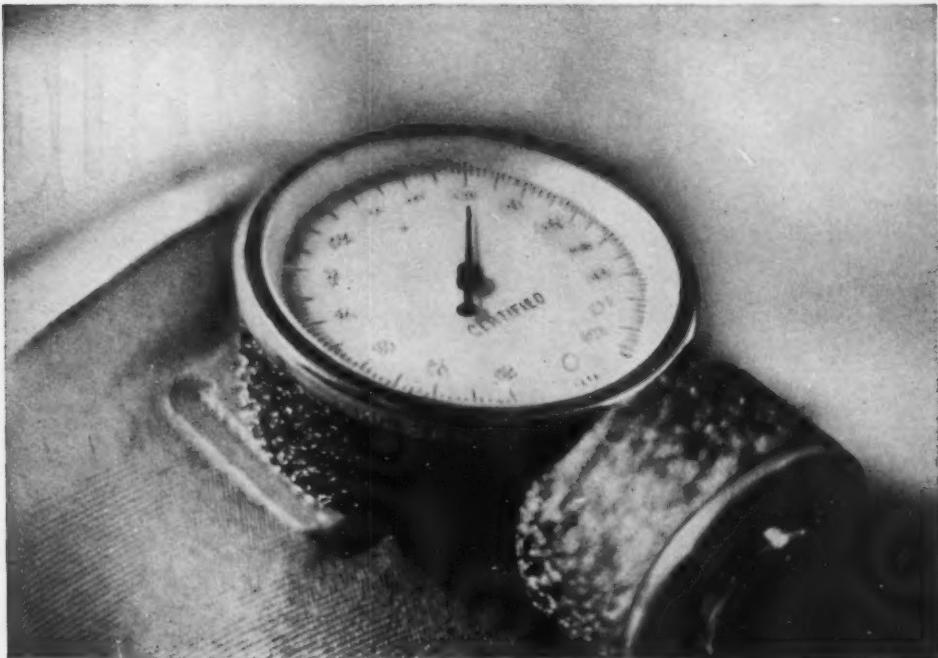


*Continued on page 186a*

# in hypertension— first rule out pheochromocytoma

Readily performed in the office unassisted, the reliable diagnostic test for pheochromocytoma with Regitine should be routine in hypertension. A potent antiadrenergic, Regitine is also valuable therapeutically in hypertensive crises and in peripheral vascular disease. A concise, illustrated booklet, THE TEST WITH REGITINE FOR PHEOCHROMOCYTOMA, is available at no charge. For your copy write: Medical Service Division, CIBA, Summit, New Jersey. SUPPLIED: Ampuls (for intramuscular or intravenous use in diagnosis), each containing 5 mg. Regitine methanesulfonate in lyophilized form. Tablets for oral administration (white, scored), each containing 50 mg. Regitine hydrochloride.

**Regitine**  
(phentolamine CIBA)

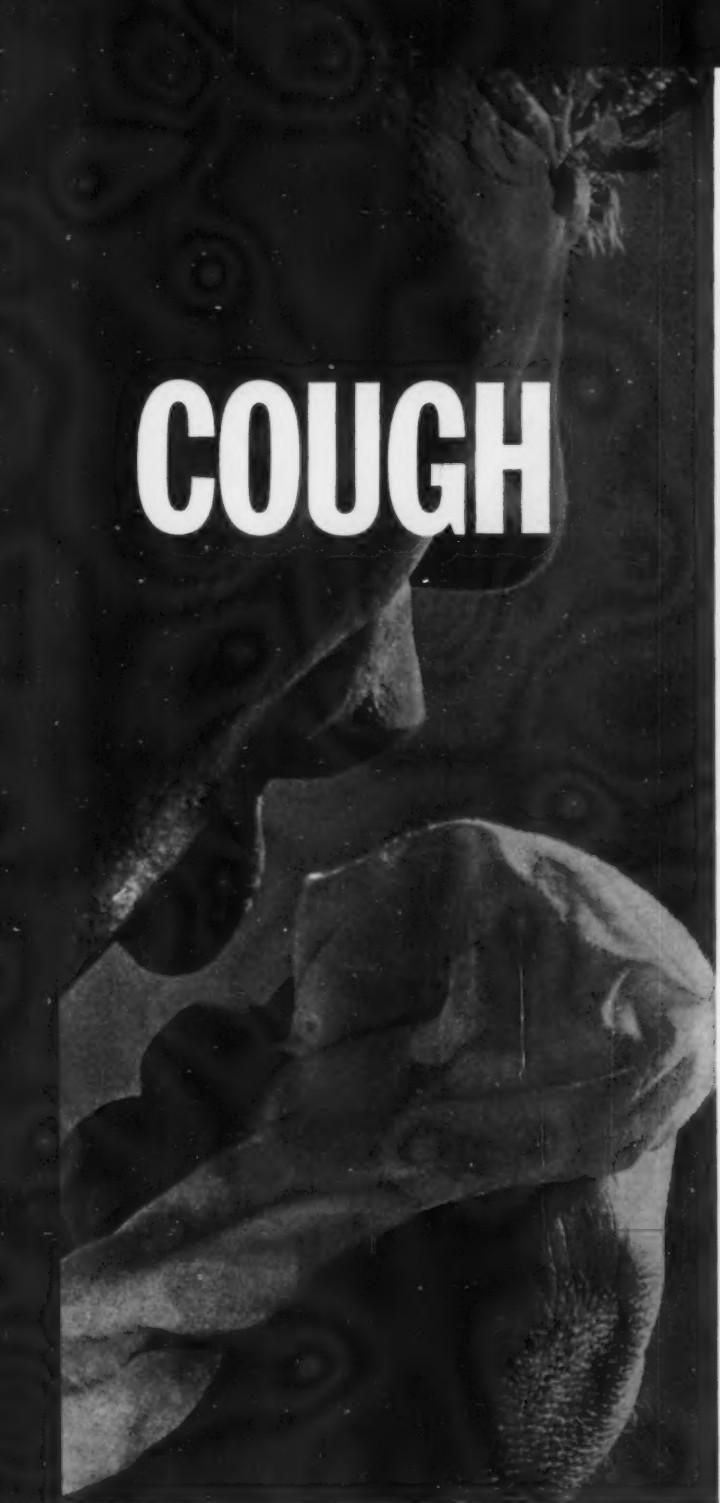


C I B A SUMMIT, NEW JERSEY

8/2617MS

**COUGH**

**COUGH**



# COUGH

# STOPPED

ROMILAR CF raises the cough-reflex threshold in 15 to 30 minutes and sustains relief for as long as six hours—without undue side effects, without narcotic hazards or complications. ROMILAR CF treats the entire cough and cold complex: dextromethorphan (ROMILAR) controls the cough, chlorpheniramine combats allergic manifestations, phenylephrine reduces nasal and bronchial congestion, N-acetyl-p-aminophenol relieves headache and myalgia and reduces fever. Infection, allergy, bronchitis, excessive smoking—whatever the cause, prescribe ROMILAR CF for cough.

For convenient use away from home, also available in capsule form.

When only the specific antitussive action of dextromethorphan is indicated, prescribe ROMILAR—Syrup, Tablets or Expectorant.

Romilar® Hydrobromide—brand of dextromethorphan hydrobromide.

# ROMILAR CF

the complete treatment for cough and other cold symptoms

SYRUP

ROCHE LABORATORIES • Division of Hoffmann-La Roche Inc • Nutley 10, N.J.

*"I need a good  
antispasmodic  
for a particularly  
fussy patient.  
Can you help?"*

**"Try Bentyl.**  
*I get near-certain  
results without  
any blurred vision  
or urinary retention  
and it's safe  
even in concurrent  
glaucoma."*

For fast, sure, safe relief of G.I. spasm and pain, prescribe Bentyl 20 mg.  
with Phenobarbital. Dosage: 1 tablet t.i.d. \*Bibliography on request.  
The Wm. S. Merrell Company / New York • Cincinnati • St. Thomas, Ontario

TRADEMARK: BENTYL® (DIOXYLOMINE) HYDROCHLORIDE





a book is to look at



buttons are to keep people warm



cats are so you can have kittens



REDISOL® is so kids have better appetites

**Redisol** (Cyanocobalamin, crystalline vitamin B<sub>12</sub>) often stimulates children's appetites with consequent weight gain.

Tiny **Redisol Tablets** (25, 50, 100, 250 mcg.) dissolve instantly in the mouth, on food or in liquids.

Also available: cherry-flavored **Redisol Elixir** (5 mcg. per 5-cc. teaspoonful); **Redisol Injectable**, cyanocobalamin injection USP (30 and 100 mcg. per cc., 10-cc. vials and 1000 mcg. per cc. in 1, 5 and 10-cc. vials).

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For additional information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.



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REDISOL IS A TRADEMARK OF MERCK & CO., INC.

## MODERN THERAPEUTICS—Continued

reaction-rate to local application of penicillin, and much lower than to systemic administration.

The necessity of incurring even this small risk may reasonably be questioned, and there would be no justification if there was another agent which was as effective and safer. Local penicillin cream is at present the best prophylactic agent against colonization with *Streptococcus pyogenes*, which so frequently causes graft failure. In a controlled trial of cases of burns, *Str. pyogenes* infection developed in only 3.7% of cases treated with penicillin cream, compared with 47.4% in a control group (Jackson et al. 1951). In view of its obvious advantages and the low incidence of reactions penicillin cream can justifiably be applied prophylactically."

MARY R. DAVIES  
*The Lancet* (1958) II, 346

### Surgical Treatment of Hyperparathyroidism

1. "Hyperparathyroidism can be accurately diagnosed before skeletal changes appear.
2. Elevated calcium and reduced phosphorus levels in the blood serum with calciuria are pathognomonic of hyperparathyroidism.
3. A conviction of the accuracy of the diagnosis stimulates the surgeon to pursue the search for the cause until it is found.
4. The changes associated with hyperparathyroidism except for those of long-standing are reversible.
5. Long time follow up studies demonstrate that the excellent results of proper surgical treatment of hyperparathyroidism are permanent as well as immediate."

FRANK GLEN  
*Annals of Surgery* (1959) Vol. 149, No. 3, P. 319

Continued on page 188a



### ...for the Painless Treatment of WARTS and CORNS

**VERGO**

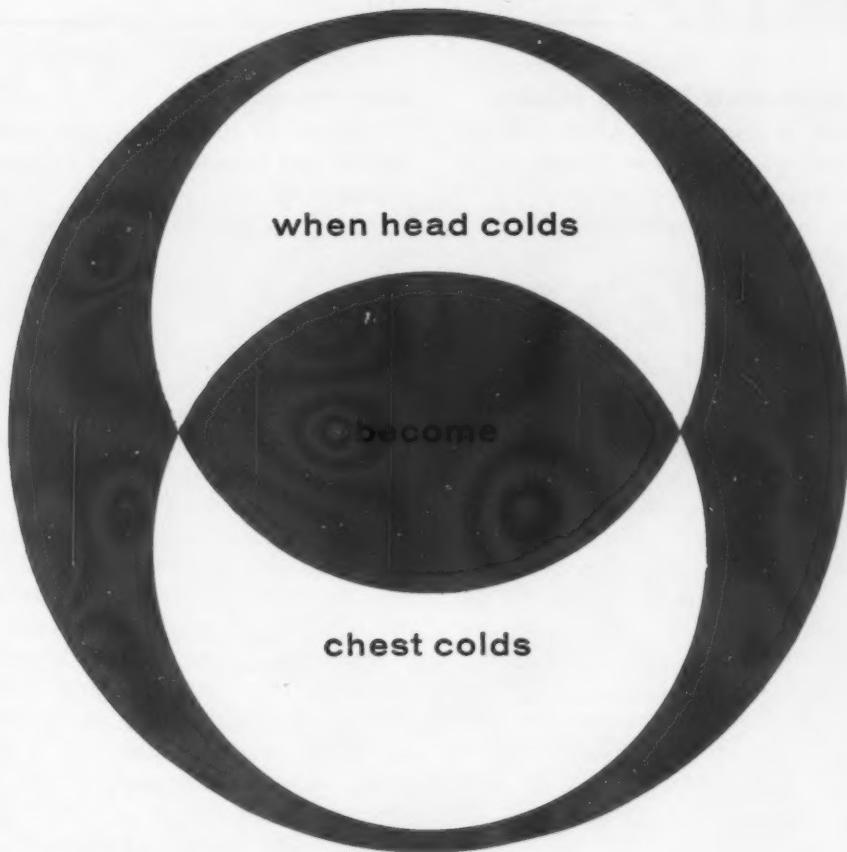
TRADEMARK

AN ETHICAL PRODUCT — PROMOTED ONLY TO PHYSICIANS

Completely painless; highly effective. No cautery, no caustics, no harmful salicylic acids, no needles, no carbon dioxide snow, no liquid nitrogen, no x-ray, no surgery, no scars, no burns or blisters, and no mess. Active ingredients: "Pancin" (specially prepared from calcium pantothenate, ascorbic acid and starch).

Samples and literature on request

**Daywell Laboratories, Inc.**  
FAIRFIELD CONNECTICUT



## Novahistine-DH\*

LIQUID

**controls cough spasm and decongests air passages.** Novahistine combined with dihydrocodeinone relieves respiratory congestion and controls useless, exhausting cough. And the delicious grape flavor of Novahistine-DH makes it appealing to both adults and children. Each 5 cc. teaspoonful contains: phenylephrine HCl, 10 mg.; prophenpyridamine maleate 12.5 mg.; dihydrocodeinone bitartrate, 1.66 mg.; chloroform, approx. 13.5 mg., and l-menthol, 1 mg. Exempt narcotic. ■ **And for all-day or all-night relief**—two long-acting Novahistine-DH Cough Tablets will quiet cough and relieve bronchial congestion for 8 to 12 hours.

PITMAN-MOORE COMPANY • DIVISION OF ALLIED LABORATORIES, INC. • INDIANAPOLIS 6, INDIANA

\*TRADEMARK



### Vasopressin-Resistant Diabetes Insipidus

"A family is described in which there are eight patients who suffer from diabetes insipidus which is resistant to vasopressin.

Some of the patients suffer only from polyuria and polydipsia, but in one patient there occurred, temporarily, growth retardation, hypernatremia, reduced urea clearance, and severe impairment of renal powers of base conservation. In three of the patients there was marked hyper-amino-aciduria.

At the time of writing (aside from aminoaciduria and failure to concentrate maximally), renal function appears to be normal in all the subjects.

Evidence is presented to support the contention that, in many instances, at least, the disease is not transmitted by a sex-linked recessive gene but by an autosomal dominant."

S. A. KAPLAN, A. M. YUCEOGLU, J. STRAUSS  
*J. of Diseases of Children,*  
Vol. 97, No. 3, (March 1959)



"... Nonsense, a little radiation never hurt anyone . . ."

### Acute Pancreatitis

"A series of 100 patients with acute pancreatitis have been studied and reviewed after periods of up to five years.

In half the men and three-quarters of the women in this series the gallbladder was abnormal. In the presence of non-functioning gallbladder the pressure of bile in the common duct may be raised above the pressure in the pancreatic duct. If the ampulla is common to both ducts and if a functional or organic obstruction at the sphincter of Oddi occurs bile may be forced up the pancreatic duct to initiate an attack of acute pancreatitis.

The general and local effects of pancreatitis are due primarily to the liberation into surrounding tissues and the blood stream of large quantities of active pancreatic enzymes.

Electrocardiographic changes suggestive of myocardial infarction may occur in acute pancreatitis. On the other hand, two patients with myocardial infarction have been seen with grossly elevated serum amylase levels (above 600 units, Somogyi).

Radiographic changes in pancreatitis are discussed. Barium-meal examination early in the course of the disease may prove to be of diagnostic value.

A serum amylase level of over three times the normal (200 units, Somogyi's method) has been found in association with a few cases of perforated gastric ulcer, intestinal obstruction, gall-stones, ruptured ovarian cyst, and myocardial infarction.

Local and general complications are discussed. Six patients developed clinical tetany, and they all died.

One-quarter of all the patients in this series died. Some of the factors influencing prognosis are discussed.

Treatment is discussed in terms of resuscitation, antibiotics, control of electrolyte and metabolic disturbances, antispasmodics, antitryptic substances, corticoids, and operations. A mild case of pancreatitis will recover what-

*Continued on page 190a*

# DERONIL™

dexamethasone

Schering

in allergic skin disorders

steroid performance that measures up to critical  
clinical standards and patient needs

5-467



ever treatment is given, and for a very severe attack no treatment appears to be of any avail. Most patients who recover from an attack of acute pancreatitis have remained well for one to five years."

A. V. POLLOCK

*British Med. Journal* (1959) 1, 13-14

#### Treatment of Thyrotoxicosis with I<sup>131</sup>

"The results of the treatment of 500 thyrotoxic patients with I<sup>131</sup> during the period January 1949, to February 1957, were reviewed in March 1958.

After the first treatment 59% became euthyroid and 10% hypothyroid. A further 21% became euthyroid after two or more treatments. The overall incidence of hypothyroidism was 12%.

Factors influencing the response to treatment have been investigated. The gland size was the most important, but this was difficult to determine accurately. The highest incidence of hypothyroidism occurred in the patients with small glands, the size of which was probably overestimated. The age of the patient and wide variations in uptake and half-life of I<sup>131</sup> in the thyroid did not have any consistent

effect on the clinical result.

Patients with tracheal compression or distortion due to thyroid enlargement were treated. No symptoms due to tracheal compression occurred after therapy, and the subsequent shrinkage of the gland restored the tracheal abnormality towards normal.

The irradiation dose to the plasma has been calculated for the younger patients. The mean plasma dose was 25 rads, but this was greatly exceeded in a few of the patients receiving two or more treatments.

Several normal pregnancies have occurred following therapy. Thirty patients have died, and the causes of death have been investigated.

Though I<sup>131</sup> therapy is effective and safe, in the present state of knowledge it should be given to patients under 40 years of age only when other methods of treatment have failed or cannot be employed. For older patients it is the method of choice."

G. W. BLOMFIELD, H. ECKERT, MONICA FISHER,  
H. MILLER, D. S. MUNRO, and G. M. WILSON  
*Brit. Med. J.* (1959), No. 5114, p. 73

#### Dorsal Kyphosis in Chronic Lung Disease

"Osteoarthritis of the spine was investigated in 300 patients with chronic obstructive lung disease and in 60 patients of comparable age with no respiratory complaints. Both groups consisted of coalminers.

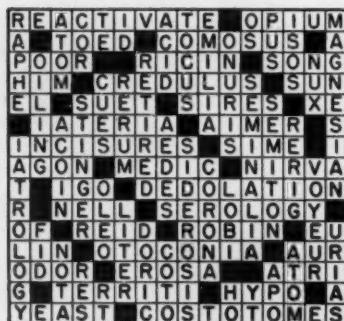
Around the age of 30 the angle of kyphosis was about equal in the two groups, but with advancing age miners with diseased chests became more kyphotic. Non-specific chronic osteoarthritis of the spine was also more common in this group.

The indirect maximum breathing capacity showed a significant negative correlation to the kyphotic angle. Electrocardiographic signs of right ventricular hypertrophy were related to the maximum breathing capacity but not to the degree of kyphosis."

DENIS F. J. HALMAGYI  
*The Lancet* (1959) I:448  
Continued on page 192a

#### MEDICAL TEASERS

Answer to puzzle on page 51a





**Traffic:** jammed

**Car:** stalled

**Temper:** mild

**Ulcer:** quiet

Here's a man whose ulcer once would have protested strongly—not just at traffic problems—but at the entire gamut of stress to which modern man is subjected.

His physician, aware that *the patient as well as the ulcer* must be treated, has prescribed ALUDROX SA.

eases tension • promotes healing  
relieves pain • reduces acid secretion  
inhibits gastric motility

## ALUDROX® SA

Suspension and Tablets: Aluminum Hydroxide Gel with Magnesium Hydroxide, Ambutonium Bromide and Butabarbital, Wyeth



Philadelphia 1, Pa.

### Results of Bilateral Adrenalectomy in the Management of Incurable Breast Cancer

“Although the criteria for the selection of patients for adrenalectomy are not firmly established, it is believed that the use of certain principles will reduce the uncertainty as to the response to be expected.

The presence of circulating estrogens, estimated by quantitative analysis of urinary estrogens or by serial vaginal smears, is valuable. When there is no detectable estrogenic activity, ablative surgery will be followed most often by an unfavorable response. However, the presence of estrogenic activity does not necessarily imply success after ablative therapy.

Patients who have benefited from the administration of testosterone or corticosteroids and those who have benefited from castration are more likely to respond favorably to adrenalectomy. The improvement is believed to be due to further suppression of estrogenic activity. Actively menstruating patients who have had a poor response to castration are likely to fail with adrenalectomy as well. There are only a few exceptions to this latter finding.

Failure to respond to either androgens or corticosteroids does not preclude a remission with adrenalectomy. The estrogen provocative test, in our hands, was dangerous and not accurate in its predictions.

Our data indicate that adrenalectomy or oophorectomy combined with adrenalectomy produced valuable palliation for 6 months or longer in 54 (34.8%) of 155 patients in this study. This was evidenced by tumor regression with concomitant symptomatic relief and prolongation of life.

Patients with inflammatory carcinoma, recurrent involvement of breast, soft tissue, and skin, and bone metastases had the highest percentage of regression, lived the longest, and often were afforded the most satisfactory palliation. The exception in the series with bone metastases was the group of patients with hypercalcemia, none of whom had remissions extending beyond 1 year.

Although patients with visceral metastases had remissions less frequently and of shorter duration, some did benefit by adrenalectomy. Functional disturbance due to visceral metastases indicated a poor prognosis and usually a poor operative risk. In this series, none of the patients with symptomatic preoperative brain metastases from mammary carcinoma benefited from adrenalectomy.

Combined oophorectomy and adrenalectomy patients, most of whom were menopausal, had a higher remission rate than did those who had had previous surgical castration and subsequently had adrenalectomy alone. The difference, which is highly suggestive but not statistically significant, may be attributed to the additional effect produced by the simultaneous castration.

Hypophysectomy after adrenalectomy seldom produced benefit and is probably not worthwhile.”

A. A. FRACCHIA, M.D., A. I. HOLLEB, M.D.,  
J. H. FARROW, M.D., N. E. TREVES, M.D.,  
H. T. RANDALL, M.D., J. A. FINKBEINER,  
M.D., and W. F. WHITMORE, JR., M.D.  
*Cancer* (1959) Vol. 12, No. 1, P. 67

*Continued on page 194a*



"Just because you have narcolepsy doesn't mean you are through in medicine. There's anesthesia . . . psychiatry . . ."



not sweet, not bitter

## TESSALON® is the tasteless cough controller

The problem of taste, which can be a hindrance to effective cough therapy, simply does not exist with Tessalon perles. There is no gagging, no refusal, no delaying, no "cheating"—because Tessalon perles provide medication enclosed in *tasteless* gelatin spheres.

Tessalon, a nonnarcotic, is  $2\frac{1}{2}$  times as effective as codeine.\* Tessalon acts both at the sensory receptors in the chest and the cough centers of the medulla. Furthermore, it controls cough frequency without interfering with productivity or expectoration; sputum is usually thinner, easier to raise. Tessalon acts within 15 or 20 minutes, controls cough for 3 to 8 hours. There are no major side effects. Whether for acute or chronic cough, whether for short- or long-term therapy, Tessalon has a remarkable margin of safety. Perles insure built-in, precise dosage—no sugar or sodium to interfere with diet, no problem of nausea. Tessalon perles are easy to swallow, easy to carry in pocket or purse.

SUPPLIED: Tessalon Perles, 100 mg. (yellow); bottles of 100. Tessalon Pediatric Perles (for children under 10), 50 mg. (red); bottles of 100. Also available (for use when oral administration of Tessalon is precluded): Ampuls, 1 ml. (5 mg.); cartons of 5.

\*Shane, S. J., Krzyski, T. K., and Copp, S. E.: Canad. M.A.J. 77:600 (Sept. 15) 1957.

TESSALON® (benzonatate CIBA)

C I B A  
SUMMIT, N. J.

**Circulatory Effects of Trumpet Playing**

"Continuous mouth and arterial pressures were recorded during trumpet playing. A professional reached 160 mm. Hg blow pressure on loud high notes; less skilled performers were unable to reach such pressures. The circulatory effects of prolonged playing were those of a formidable Valsalva manoeuvre. Dizziness or blackout may result."

M. FAULKNER and E. P. SHARPEY-SCHAFFER  
*Brit. Med. J.* (1959), I:686

**Hepatitis and Cirrhosis in Women  
With Positive Clot Tests for L. E.**

"Seven women had evidence of a chronic diffuse systemic disease, with eventual development of serious impairment of hepatic function. For varying periods before the evidence of hepatic disease appeared, these patients presented protean symptoms consistent with the clinical diagnosis of disseminated lupus erythematosus. At the time objective evidence of grave disease of the liver was evident, they presented in general the usual clinical picture

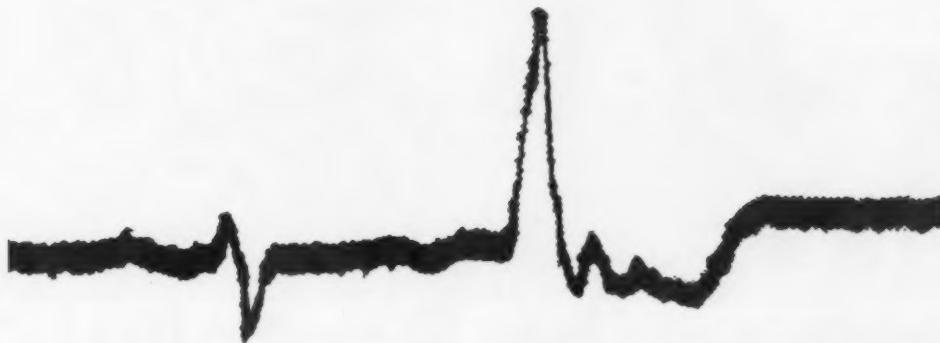
of apparent well-being, strikingly different from that ordinarily expected in other forms of serious disease of the liver.

The outstanding laboratory findings included marked hypergammaglobulinemia, positive serologic reaction for syphilis, extreme elevation of the sedimentation rate and abnormal urinary sediment. Among the tests of hepatic function that gave unequivocally abnormal results were the thymol turbidity and cephalin-cholesterol flocculation and the determinations of serum albumin, prothrombin time and serum bilirubin. The typical cells of disseminated lupus erythematosus were repeatedly demonstrated in the serum or bone marrow in every case.

In the cases in which we were able to examine the liver histologically, the lesion resembled that of acute and subacute viral hepatitis in 3 cases and postnecrotic cirrhosis in 2 cases."

LLOYD G. BARTHOLOMEW,  
ALBERT B. HAGEDORN, JAMES C. CAIN  
and ARCHIE H. BAGGENSTOSS  
*New Eng. J. of Med.* (1958), Vol. 259, No. 20, P. 955  
Concluded on page 198a





*for cardiac arrhythmias... obvious advantages*

# PRONESTYL® HYDROCHLORIDE

SQUIBB PROCAINE AMIDE HYDROCHLORIDE

Pronestyl offers obvious advantages over quinidine and procaine in the management of cardiac arrhythmias: "Procaine amide [Pronestyl] should be the drug of choice in arrhythmias of ventricular origin."<sup>1</sup>—on oral administration, side effects are less marked than with quinidine—administered I.V., Pronestyl is safer than a corresponding I.V. dose of quinidine—administered I.M., Pronestyl acts faster than I. M. quinidine<sup>2</sup>—Pronestyl sometimes stops arrhythmias which have not responded to quinidine<sup>3,4</sup>—Pronestyl may be used in patients sensitive to quinidine—more prolonged action, less toxicity, less hypotensive effect than procaine—no CNS stimulation such as procaine may produce.

**Supply:** For convenient oral administration: Capsules, 0.25 gm., in bottles of 100.

For I. M. and I. V. administration: Parenteral Solution, 100 mg. per cc., in vials of 10 cc.

References: 1. Zapata-Diaz, J., et al.: Am. Heart J. 43:854, 1952. 2. Modell, W.: In Drugs of Choice, C.V. Mosby Co.; St. Louis, 1958, p. 454.  
3. Kayden, H. J., et al.: Mod. Concepts Cardiovasc. Dis. 20:100, 1951. 4. Miller, H., et al.: J.A.M.A. 146:1004, 1951.



*Squibb Quality—the Priceless Ingredient*

\*PRONESTYL® IS A SQUIBB TRADEMARK

# pooped patient?



# prescribe Peptolin!



## perks up mental outlook — revitalizes tired bodies

Pooped patients pick up fast on new ELIXIR PEPTOLIN. A basic, year-round tonic, ELIXIR PEPTOLIN contains Pipradrol to brighten the patient's day, plus vitamins, minerals (including real therapeutic doses of iron), lipotropics and bioflavonoids for good nutritional support. Moreover, ELIXIR PEPTOLIN has a good-tasting sherry-wine base that is 16-18% alcohol. So try ELIXIR PEPTOLIN in your pooped patients . . . just one tablespoonful t.i.d. You'll like the results. Available in 16-oz. bottles. Prescription only. **WALKER LABORATORIES, INC., MOUNT VERNON, NEW YORK**



WHENEVER COUGH THERAPY IS INDICATED

# Hycomine

SYRUP

THE *complete*

RX FOR COUGH CONTROL

cough sedative / antihistamine / expectorant

- relieves cough and associated symptoms in 15-20 minutes • effective for 6 hours or longer
- promotes expectoration • rarely constipates
- agreeably cherry-flavored

Each teaspoonful (5 cc.) of HYCOMINE® contains:

Codein	5 mg.	6.5 mg.
Dihydrocodeinone Bitartrate <small>(Warning: May be habit-forming)</small>	1.5 mg.	
Homatropine Methylbromide	1.5 mg.	
Pyridoxine Hydrochloride	12.5 mg.	
Ammonium Chloride	10 mg.	
Sodium Citrate	60 mg.	
	85 mg.	

Supplied: As a pleasant-to-take syrup. May be habit-forming. Federal law permits oral prescription.

NOW MORE EFFECTIVE  
THAN EVER WITH THE  
NASAL DECONGESTANT  
PHENYLEPHRINE

Literature  
on request

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ENDO LABORATORIES Richmond Hill 18, New York

**for therapy  
of overweight patients**

- d-amphetamine  
*depresses appetite and elevates mood*
- meprobamate  
*eases tensions of dieting*  
(yet without overstimulation, insomnia  
or barbiturate hangover)

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**BAMADEX®**  
MEPROBAMATE WITH D-AMPHETAMINE SULFATE LEDERLE

**is a logical combination in appetite control**

Each coated tablet [pink] contains: meprobamate, 400 mg.; d-amphetamine sulfate, 5 mg.  
Dosage: One tablet one-half to one hour before each meal.



LEDERLE LABORATORIES

A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



**MODERN THERAPEUTICS—Concluded**

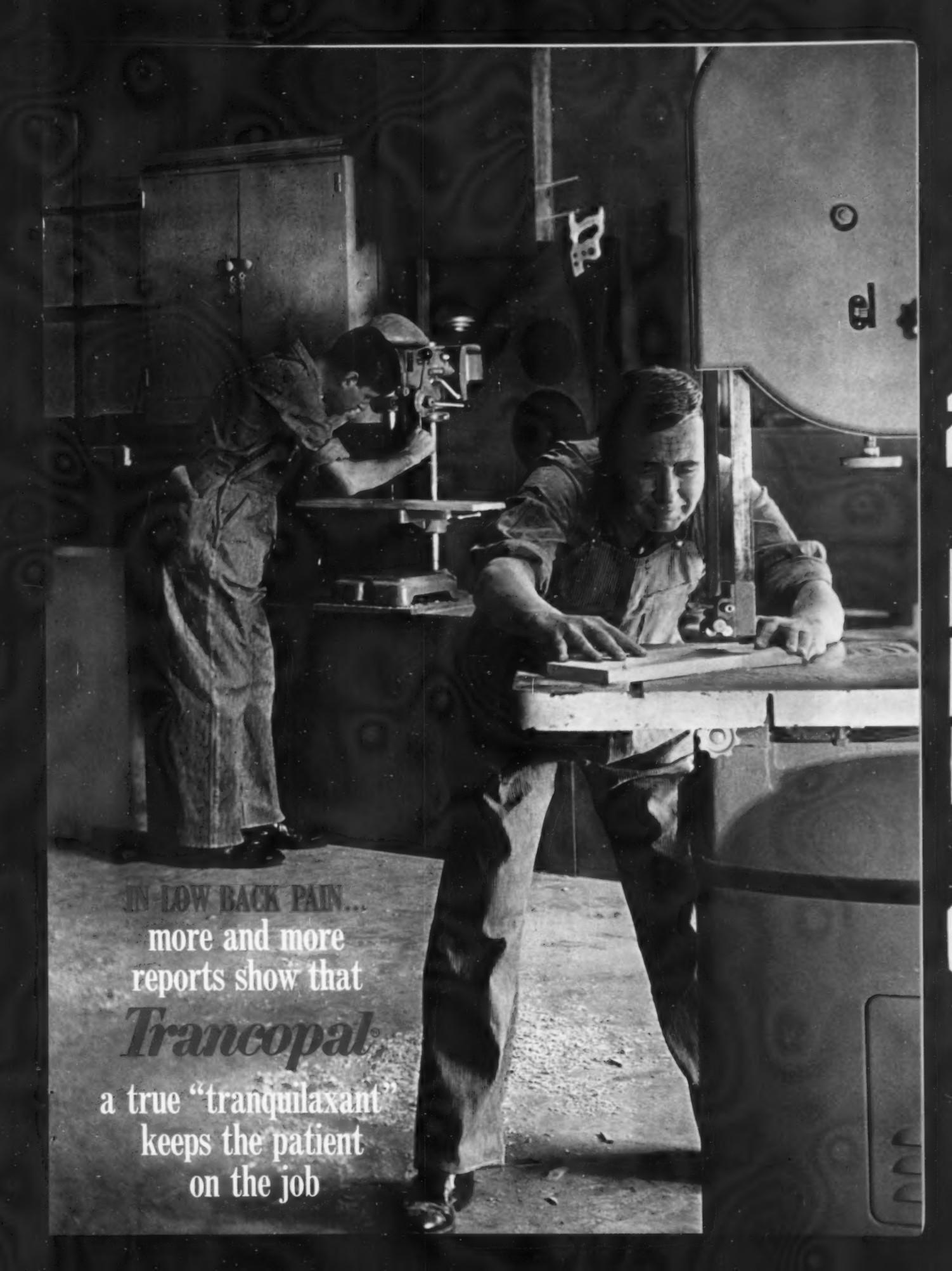
**Depressive Reactions in Hypertensives**

"A review was made of 387 resident patients with arterial hypertension who were treated at the Mayo Clinic during the years 1954 and 1955. It was found that of 202 patients who were treated with some form of Rauwolfia serpentina, 53 (26 percent) experienced a depressive reaction. This was moderately severe or severe in 21 persons (10 percent). In contrast a comparable control group of 185 hypertensive patients who received no antihypertensive medication produced only 9 instances (5 percent) of depression with 6 (3 percent) being classed as moderately severe or severe. The evidence did not indicate any relationship of depression to severity of hypertension, to drugs other than Rauwolfia, or to the efficacy of treatment in lowering blood pressure. In addition no correlation could be found between depression and the age or sex of the patient, nor with any complicating disease.

Depression occurred in more than half of those persons who had a history of depression, prior to beginning treatment with Rauwolfia and in almost a fourth of the patients without such a history. The dose of Rauwolfia tolerated by different individuals varied, but no depressions were observed in patients taking less than 0.2 mg. of reserpine daily. Although 32 (60 percent) of the 53 depressive reactions occurred within the first 6 months after treatment with Rauwolfia was begun, 6 (11 percent) came on after 1 year of treatment. Patients taking Rauwolfia serpentina, whether as whole root extract, alseroxylon fraction, or reserpine, require close observation indefinitely for any evidence of mental depression.

In view of the frequency and severity of depressive reactions among hypertensive patients treated with Rauwolfia, the physician must evaluate the indications for use of this drug with extreme care and whenever possible avoid its use altogether."

RICHARD M. QUETSCH, RICHARD W. P. ACHOR,  
EDWARD M. LITIN, ROBERT L. FAUCETT  
*Circulation* (1959) Vol. XIX, No. 3, P. 374



...LOW BACK PAIN  
more and more  
reports show that  
***Trancopal®***  
a true "tranquillaxant"  
keeps the patient  
on the job

THE FIRST TRUE "TRANQUILAXANT"  
**Trancopal®**

*relieves painful muscle spasm  
and relaxes the patient*



Impressive numbers of patients with low back pain and other musculoskeletal conditions treated with Trancopal have been freed of symptoms and enabled to return to their usual activities, according to newly published clinical reports. In a recent study by Lichtman,<sup>1</sup> Trancopal brought excellent to satisfactory muscle relaxation to 817 of 879 patients. The patients in this group suffered from skeletal muscle spasm associated with low back pain (361 cases), stiff neck (128 cases), bursitis (177 cases), and other skeletal muscle disorders (213 cases). Side effects were rare (2 per cent of patients), and it was not necessary to discontinue medication in any of the patients. Lichtman comments: "Chlormethazanone [Trancopal] not only relieved painful muscle spasm, but allowed the patients to resume their normal activities with no interference in performance of either manual or intellectual tasks."<sup>2</sup>

*When you prescribe Trancopal for musculoskeletal disorders, you can confidently expect that your patients will be relieved of the pain and stiffness. You can be sure of their speedy return to everyday work and recreation.*

Mullin and Epifano call Trancopal "...a very effective skeletal muscle spasmolytic."<sup>3</sup> They found that Trancopal brought good to excellent relief to all of 39 patients with skeletal muscle spasm related to trauma, bursitis, rheumatoid arthritis, osteoarthritis, and intervertebral disc syndrome. (No side effects were noted except that one patient had slight dryness of the mouth.)

The pattern is similar in every new series reported: Ganz,<sup>4</sup> DeNyse,<sup>5</sup> Shanaphy<sup>6</sup> and Stough.<sup>7</sup>

## ***Trancopal is a true "tranquilaxant"***

Trancopal "...combines the properties of tranquilization and skeletal muscle relaxation with no concomitant change in normal consciousness."<sup>6</sup>

## ***Relieves dysmenorrhea***



Trancopal not only is valuable in treating patients with low back pain and other musculoskeletal disorders, but is also very effective in bringing relief from menstrual cramps and discomfort. Shanaphy suggests that Trancopal may help the patient by its combination of muscle relaxant and tranquilizing actions, and he finds that "...the continued use of chlormezanone [Trancopal] as a therapeutic agent in dysmenorrhea is advisable."<sup>6</sup> Trancopal was effective in 82 per cent of his series of 50 patients. In another study, which dealt with 52 adolescent girls and 23 women, Stough<sup>7</sup> reported that Trancopal gave complete or moderate relief in 86.4 per cent.

## ***Alleviates tension***

And, of course, Trancopal is also very useful in the treatment of patients in anxiety and tension states. As Ganz says, "...a most valuable drug for relieving tension, apprehension and various psychogenic states... allows the patient to use his energies in a more productive manner in overcoming his basic problems."<sup>4</sup>

# Trancopal

## a true "tranquilaxant"

that relieves skeletal muscle spasm  
and relaxes psychogenic tension  
without troublesome side effects,  
and keeps the patient on the job.

Indicated for...

Musculoskeletal disorders	Psychogenic disorders
Low back pain (lumbago)	Fibrosis
Neck pain (torticollis)	Ankle sprain, tennis elbow
Bursitis	Myositis
Rheumatoid arthritis	Postoperative muscle spasm
Osteoarthritis	
Disc syndrome	
	Anxiety and tension states Dysmenorrhea Premenstrual tension Asthma Angina pectoris Alcoholism

Now available in two strengths:

- Trancopal Caplets®, 100 mg.  
(peach colored, scored), bottles of 100.
- NEW STRENGTH** Trancopal Caplets, 200 mg.  
(green colored, scored), bottles of 100.

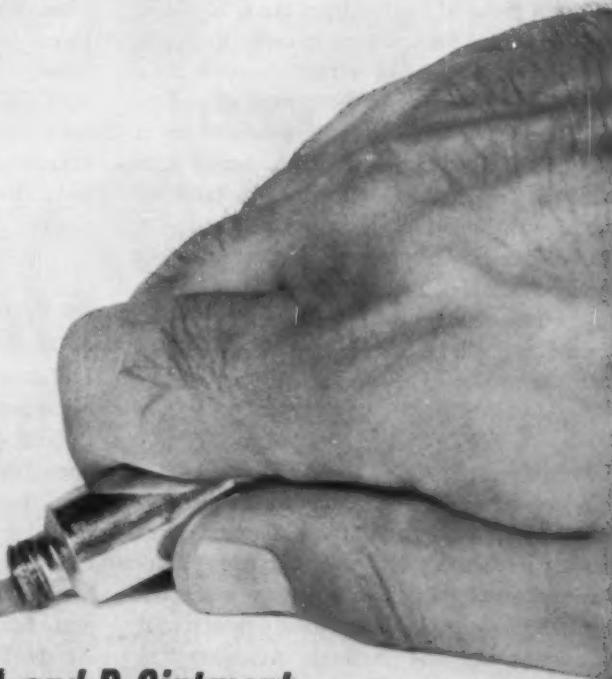
*Dosage:* Adults, 100 or 200 mg. orally three or four times daily. Relief of symptoms occurs in from fifteen to thirty minutes and lasts from four to six hours.

In professional models used for photographic

*References:* 1. Lichtman, A. L.: Scientific Exhibit, meeting of the International College of Surgeons, Miami Beach, Fla., Jan. 4-7, 1959. 2. Lichtman, A. L.: Kentucky Acad. Gen. Pract. J. 4:28, Oct., 1958. 3. Mullin, W. G., and Epifane, Leonard: Am. Pract. & Digest Treat. 10:1743, Oct., 1959. 4. Ganz, S. E.: J. Indiana M. A. 52:1124, July, 1959. 5. DeNye, D. L.: M. Times 71:1512, Nov., 1959. 6. Shanshy, J. F.: Current Therap. Res. 1:58, Oct., 1959. 7. Stough, A. R.: J. Oklahoma M. A. 52:575, Sept., 1959.

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Vitamin A and D  
Ointment  
clinically  
well established  
for its  
emollient-protective  
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healing actions is  
**now also available**  
**with 0.5 per cent**  
**Prednisolone**  
for its  
potent  
anti-inflammatory  
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actions  
and patient  
comfort.*



**White's Vitamin A and D Ointment  
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In 10 and 25 Gm. tubes on prescription.

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## NEWS AND NOTES

Selected items of current interest from the fields of medical research and education

### Investigation of a New Anti-Cancer Substance

Nicholas M. Kredich, a junior at the University of Michigan Medical School, has received a grant of \$4,000 from the U.S. Public Health Service for one year in order to devote full time to a study of a rare chemical compound which may affect the growth of cancer. The chemical, cordycepin, is produced by a tiny fungus which grows on the bodies of dead insects. Kredich had to send to Holland for the original fungus which he is now growing in the biochemistry laboratory. Cordycepin structurally resembles a component of the nucleic acids. Investigation of the manner in which it is produced will be even more time-consuming than the testing of its anti-cancer qualities.

### Trachoma

A new advance in the search for an immunization procedure against the different viruses causing trachoma was reported by three Harvard scientists participating in the trachoma research program conducted jointly by Harvard University and the Arabian American Oil Company (Aramco). Trachoma is most prevalent in tropical and subtropical areas. At least two different types of trachoma viruses occur in the Middle East.

The findings of the scientists may assist in solving the most baffling problem in trachoma research—whether it is possible to immunize

human beings against the different viruses causing the disease. The Harvard and Aramco research has been carried on for five years in the laboratories of the Aramco Medical Department in Dhahran, Saudi Arabia, and in the Department of Microbiology of the Harvard School of Public Health. The program has been financed by Aramco grants totaling \$500,000. In April 1959, Aramco authorized the expenditure of an additional \$585,000 to continue the research work for another five years.

### Dr. Bernard L. Horecker

Dr. Bernard L. Horecker has been appointed Professor and Chairman of the Department of Microbiology of the New York University College of Medicine. The Doctor is widely known for his work in carbohydrate metabolism, particularly for the alternate pathway involving five-carbon and seven-carbon sugars. He is presently studying carbohydrate metabolism in bacteria, and the mechanism of transport of carbohydrates across the cell membrane. At the National Institute of Health he was formerly the Chief of the Laboratory of Biochemistry and Metabolism and of the Section on Enzymes and Cellular Biochemistry. He also conducted research in cellular oxidation and carbohydrate metabolism, toxicology and enzymology.

*Continued on page 202a*

*More Convenient*

## A New $\wedge$ Route for Relief of Recurrent Throbbing HEADACHES

Approximates the SPEED and  
PREDICTABILITY of relief fol-  
lowing injection of ergotamine

In 2.5 cc. stainless steel vial with  
plastic oral adapter. Each cc.  
contains 9.0 mg. ergotamine  
tartrate. Each depression of  
the metering valve delivers  
0.36 mg. ergotamine tartrate  
self-propelled from the oral  
adapter.

including migraine  
syndromes,  
other vascular  
headaches,  
histaminic  
cephalalgia,  
and occipital  
neuralgia.

# Medihaler®-Ergotamine

Oral Inhalation of Micronized Ergotamine Tartrate

**Dosage:** A single inhalation at onset of headache. Repeat in 5 minutes if not relieved. Any additional inhalations should be spaced at intervals of not less than 5 minutes. Not more than 6 inhalations should be taken in any 24-hour period.

**More Effective and Faster Acting**  
than 1 mg. oral or sublingual ergotamine with  
or without caffeine.

**Convenient...**relief readily available anywhere, any time, without delay, without embarrassment—vest-pocket size unit travels with the patient.

**Economical...**each vial delivers at least 50 doses.

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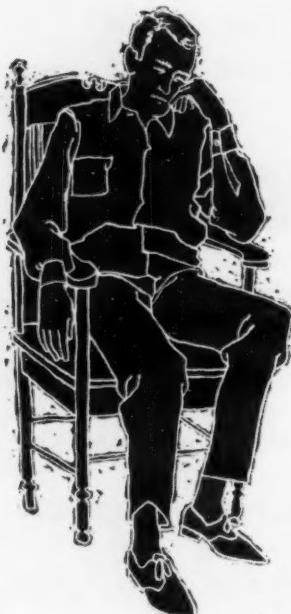
to help control  
progressive disorders  
of aging...

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mineral-vitamin-hormone supplement

begins at 40      KAPSEALS®

Taken during the middle years, ELDEC Kapseals help forestall nutritional and hormonal deficiencies that contribute to the troublesome disorders of aging. ELDEC Kapseals provide comprehensive physiologic supplementation...aid in maintaining metabolic efficiency. At a time when normal function is declining, ELDEC Kapseals help lay a firm foundation for good health and vitality in the later years.



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## NEWS AND NOTES—Continued

### The McDowell Apothecary

A rare collection of 18th and 19th century pharmacy equipment, glassware, and ceramic jars has recently been given to the restored McDowell Apothecary in Danville, Kentucky. The shrine, honoring Dr. Ephraim McDowell, pioneer surgeon who was the first to perform successfully a major abdominal operation, has been restored by the Kentucky State Medical Association and the Kentucky Pharmaceutical Association. The 180-piece collection was installed in time for the dedication of the apothecary on August 14, 1959. The collection includes glassware of striking period design made by early craftsmen in Scotland, England, France, and the United States. Among the older pieces are 12 English Delft drug jars dating back to the middle of the 18th century, two rare green carboy-shaped stock bottles made in Scotland about 1780, and a massive, attractively-decorated leach jar. There are also examples of glassware used by the McDowell Apothecary from 1795 to 1856, as well as early American mortars and pestles and balances. Dr. McDowell opened the apothecary in 1795 when he began to practice in Danville. It was the first drug store west of the Allegheny Mountains. The apothecary and the doctor's office in the rear adjoin Dr. McDowell's home which was restored and opened to the public in 1939.

### The Wellcome Prize

The Wellcome Prize for 1959 has been awarded to Lieut. Col. Samuel Hurewitz, M.C., U.S.A., Commanding Officer of the Seventh Evacuation Hospital in Germany.

The Wellcome Prize is presented annually at the discretion of The Association of Military Surgeons for the best essay on medico-military affairs prepared by one of its members. The prize consists of a silver medal, a scroll, and an honorarium of five hundred dollars.

The Wellcome Prize essay for 1959 is entitled "Military Medical Problems of the Leba-

non Crisis." It reports the field investigations and studies of the author of the medical problems encountered when our troops were suddenly ordered into Lebanon in July of 1958, where they remained until mid-October. Advance medical planning had not been possible and threats to the sanitation and health of our troops were very extensive. By vigorous medical efforts, education and training outbreaks of disease were minimized and a potential catastrophe avoided.

The author sets forth clearly the types of medical problems encountered and the aggressive and systematic steps which were necessary to overcome them. He makes vividly real the necessity for advanced medical planning for operations of this type and the importance of all elements of command to take an active part in protecting the health of the troops.

The presentation was made on behalf of the Trustees of the estate of the late Sir Henry Wellcome by Brigadier General John R. Wood, Medical Corps, U.S. Army (Retired), Vice President and Director of Research of Burroughs Wellcome & Co. (U.S.A.) Inc.

#### Dr. John A. D. Cooper

Dr. John A. D. Cooper, Professor of Biochemistry, was named Associate Dean of Northwestern University Medical School. Since 1956, he has been Assistant Dean. Dr. Cooper organized a course on the application of nuclear physics in biology and medicine which he first taught in 1949, reportedly the first of its kind in medical schools.

#### Plasmalogen

Investigators into the biologic formation and role of one of the body's unexplained chemical compounds is underway at the University of Michigan Medical Center. Dr. W. E. Landis is conducting a three-year study of plasmalogen with a research grant of \$23,370 from the National Science Foundation. Plasmalogen is an unusual compound found in high concentration in the nervous and muscular tissues of the body.

*Continued on the following page*

for happy,  
healthy retirement years

**ELDEC®**  
comprehensive physiologic supplement

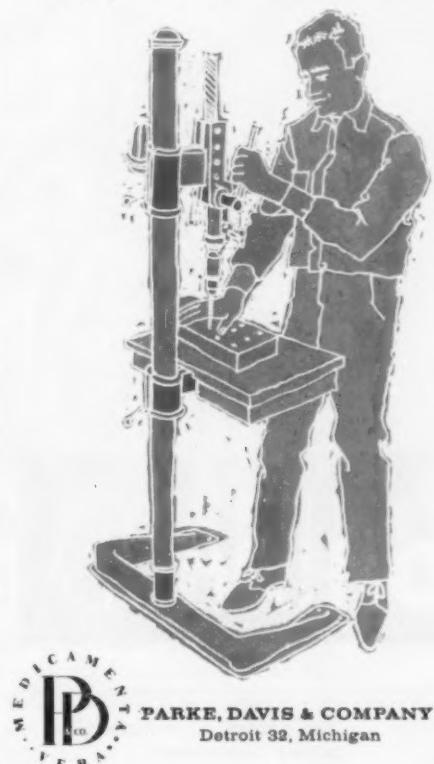
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- 10 important vitamins plus minerals to help maintain cellular function and correct deficiencies
- protein improvement factors to help compensate for unwise choice of food
- digestive enzymes to aid in offsetting decreased natural production
- steroids to stimulate metabolism and prevent or help correct protein depletion states

Packaging: ELDEC Kapsals are available in bottles of 100



## NEWS AND NOTES—Continued

**HYPERTUSSIS®**  
pertussis immune globulin  
derived from adult venous blood  
**in whooping cough...**  
shortens the course, lessens the severity, reduces the rate of complications. Also for prophylaxis.  
Available in one dose 1½ cc. vial.

**CUTTER**  
A Leader in Human Blood Fractions Research

**Polio IMMUNE GLOBULIN**  
gamma globulin  
derived from adult venous blood  
**modifies or prevents measles**  
Available in 2 cc. and 10 cc. vials.  
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664, Ask Your Cutter Man,  
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a  
logical  
combination  
for  
appetite suppression

meprobamate plus d-amphetamine

... suppresses appetite ... elevates mood  
... reduces tension ... without insomnia,  
overstimulation, or barbiturate hangover.



Each coated tablet [pink] contains: meprobamate, 400 mg.; d-amphetamine sulfate, 5 mg.  
Dosage: One tablet one-half to one hour before each meal.



LEDERLE LABORATORIES

A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

### Increased Facilities at the University of Pennsylvania

The development of a dynamic new integrated teaching and research center for the basic biologic sciences at the University of Pennsylvania, which will be closely associated, both physically and intellectually, with the School of Medicine, has been made possible by three grants: \$1,000,000 from the Longwood Foundation, a philanthropic organization created by Pierre S. duPont; \$473,345 from the US Public Health Service, and \$430,000 from the Rockefeller Foundation. This will bring into being a new building for research and teaching for the University's Division of Biology, several levels of which will interconnect with the Medical School's research building. It will also be possible to rehabilitate portions of an existing zoology building to which the new structure will be joined; and provide construction of greenhouses and a service laboratory, including experimental growth chambers and animal rooms.

Commenting on the new development, Provost Jonathan E. Rhoads stated that Pennsylvania is one of the few universities so planned that its Medical School is set within its main campus. This factor, as well as its traditionally strong programs in biology, medicine, and biophysics, presents a unique opportunity for the development of an integrated center for these disciplines. It is particularly fortunate that the Longwood Foundation, the Rockefeller Foundation, and the Federal government through the US Public Health Service have cooperated in creating in Philadelphia this center with its tremendous potentialities for interdisciplinary research in the life sciences.

The future of much biologic research depends on increasing use of physical instruments and mathematical and analytical thinking. The development of the program in biologic sciences will be immeasurably strengthened and deepened by constant interchange between the groups in biology, biophysics and biochemistry.

*Continued on page 208a*



the gentlest doctors in town  
stop pain with **Nupercainal**<sup>®</sup>

(dibucaine CIBA)  
...For minor cuts and burns, sunburn, hemorrhoids, removing sutures, performing routine office surgery, making instrument examinations. And, to best suit every situation, there's a choice of Ointment, Cream, Lotion, Suppositories.

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C I B A  
SUMMIT, N. J.



## **new for angina pectoris:**

### **Often Succeeds in Difficult Cases**

Among 48 patients<sup>4</sup> previously treated with other coronary vasodilators, ISORDIL was demonstrably superior in 37, equivalent in 9, inferior in 2.

### **Markedly Reduces Attacks**

Albert<sup>5</sup> found that 92 per cent of patients responded favorably to ISORDIL. During this study, anginal attacks were reduced from an average of 5 a day to just 1.2 a day.

### **Benefits Confirmed by EKG's**

Electrocardiographic studies by Russek<sup>3</sup> clearly show that ISORDIL produces a more favorable balance between oxygen supply and demand following the Master two-step test.

**"The most effective medication for the treatment of coronary insufficiency available today."**

—Sherber<sup>6</sup>

## **prompt, prolonged coronary vasodilatation**

### **■ 1 rapid onset**

ISORDIL acts rapidly compared with other prophylactic agents—patients usually experience benefits within 15 to 30 minutes. Virtually eliminates unprotected periods.

### **■ 2 prolonged action**

The beneficial effects of a single dose persist for at least 4 hours—therefore for most patients q.i.d. dosage is highly satisfactory.

### **■ 3 consistent effect**

Response of patients treated in various clinical studies<sup>†</sup> to date was 85 per cent good, 7 per cent fair, and 8 per cent unsatisfactory.

### **■ 4 unusual safety**

The only side effect reported has been transitory, easily controlled headache, normally considered an expression of effective pharmacodynamic activity.<sup>‡</sup>

#### **References:**

1. Summary of Case Reports on File, Ives-Cameron Company (1958-1959).
2. Riseman, J.E.F., et al.: Circulation 17:22 (Jan.) 1958.
3. Russek, H.I.: Personal Communication (Oct., 1959).
4. Case Reports on File, Ives-Cameron Company (1958-1959).
5. Albert, A.: Personal Communication (Oct., 1959).
6. Sherber, D.A.: Personal Communication (Oct., 1959).

**"ISORDIL is a new and effective agent for  
therapy of angina pectoris."**  
—Russek<sup>§</sup>

# ISORDIL\*



IVES-CAMERON COMPANY • New York 16, New York

Isosorbide Dinitrate, Ives-Cameron



Literature and Professional Samples Available on Request

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## NEWS AND NOTES—Continued

### Grants to Medical College of Virginia

Funds received by the Medical College of Virginia during the past fiscal year through gifts, grants, and contracts totaled \$1,680,807. Gifts amounted to \$212,013, grants to \$1,205,677, and contracts to \$263,117. The principal increase was in grants, which have shown a steady growth for the past several years. These figures express in dramatic fashion the high respect in which the faculty members are held by the many donors and grantors concerned.

The College now participates in a wide grant of research projects, sponsored by both public and private agencies. An important new project is now underway to raise funds for the acquisition of a 2,000,000-volt X-ray machine for further research in whole body radiation, and for the conventional methods of cancer treatment. The machine, installed and housed, is

estimated to cost approximately \$160,000. Much research in this field has been done already at the Medical College of Virginia in the Surgical Research Laboratory with the use of a 1,000,000-volt machine, but this equipment is not designed for or adaptable to the hospital uses envisioned for the 2,000,000-volt unit.

### Cell Structure Studies

According to a professor at the University of Michigan, the tremendous strides already made or those to be made in the future regarding the knowledge of cell growth and activity have been made possible by the electron microscope. This machine permits the study of cell structures 12 millionth of an inch in thickness.

*Continued on page 212a*

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THE POTENTIATED DECONGESTANT



**provides symptomatic relief of nasal congestion and rhinorrhea of allergic or infectious origin**

**Many patients whose symptoms are inadequately controlled by decongestants or antihistamines alone respond promptly and favorably to 'ACTIFED'.**

	in each Tablet	in each tsp. Syrup
'Actidil'® brand Triprolidine Hydrochloride	2.5 mg.	1.25 mg.
'Sudafed'® brand Pseudoephedrine Hydrochloride	60 mg.	30 mg.

**safe and effective for patients of all ages suffering from upper respiratory tract congestion**

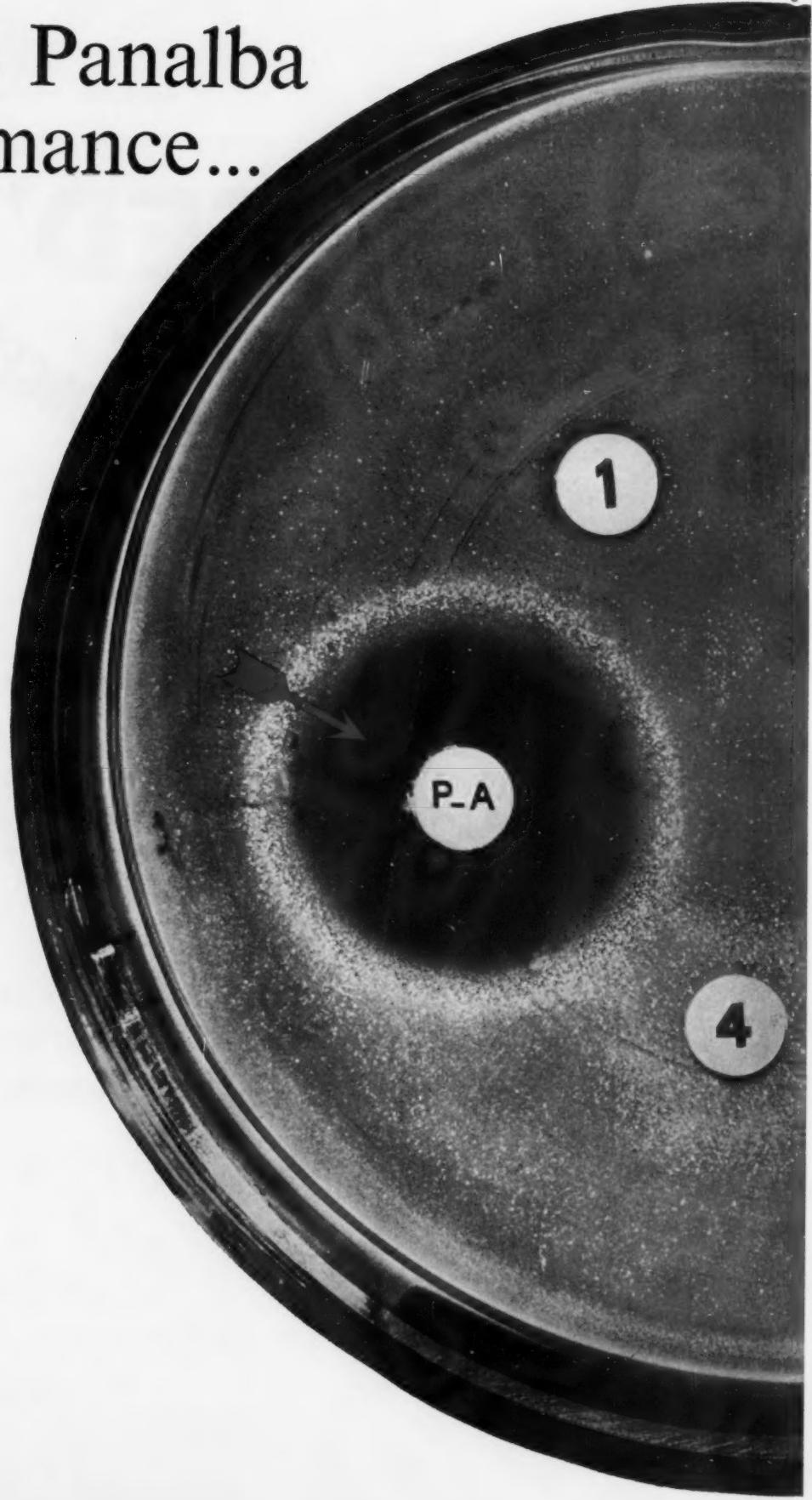
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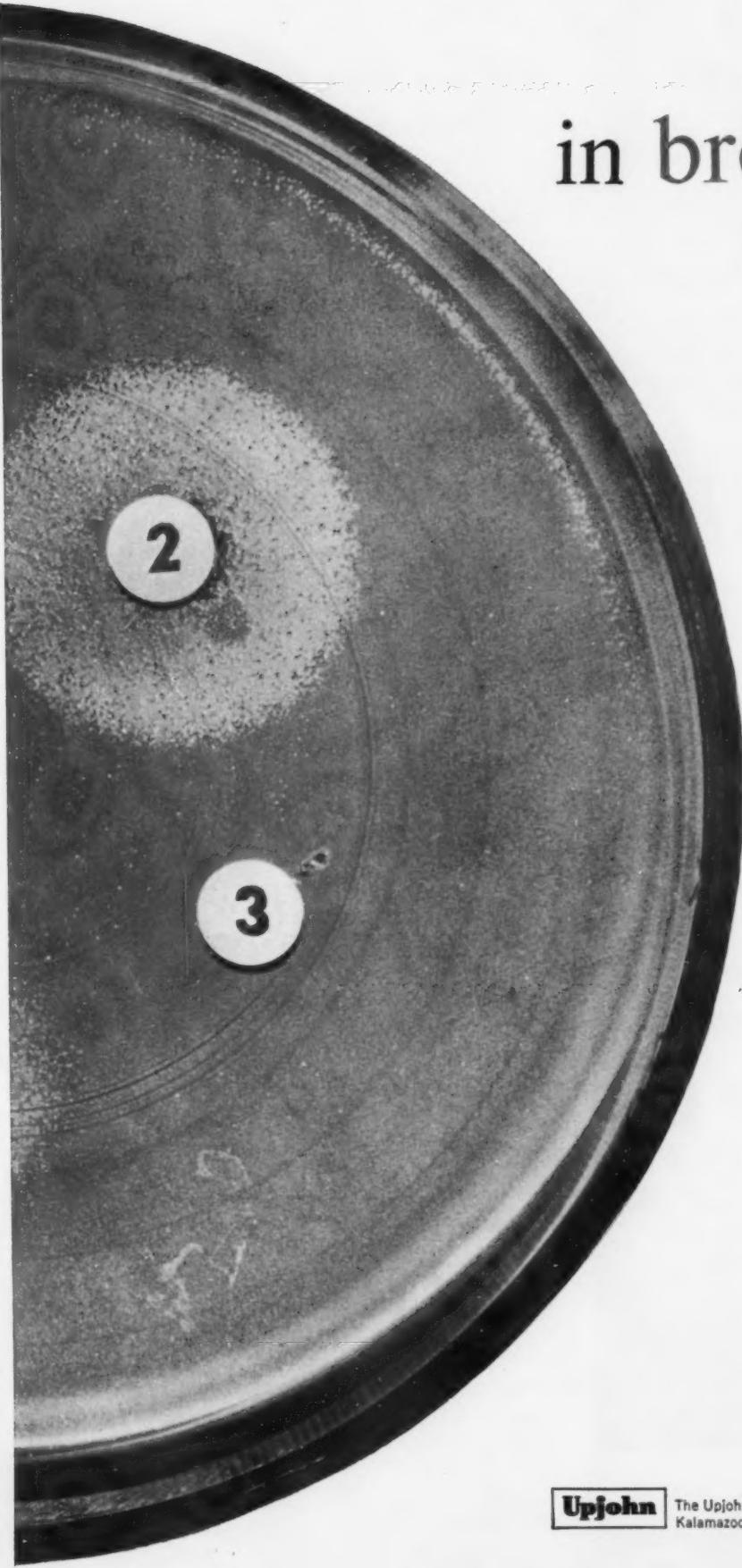
	TABLETS	SYRUP (5 cc. tsp.)	} three times daily
Adults and older children	1	2	
Children 4 months to 6 years of age	½	1	
Infants through 3 months	-	½	



BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

This is Panalba  
performance...





## in bronchitis

... into a mixed culture of the four organisms commonly involved in bronchitis . . . *Str. hemolyticus*, *D. pneumoniae*, *H. influenzae* and *Staph. aureus* (in this case a resistant strain) . . . we introduce the five most frequently used antibiotics.

Twenty-four hours later (in this greatly enlarged photograph), note that only *one* of the five leading antibiotics has stopped *all* the organisms, including the resistant staph! This is Panalba.

In your next patient with bronchitis . . . in *all* your patients with potentially-serious infections . . . provide this extra protection with your prescription:

Dosage—1 or 2 capsules 3 or 4 times a day.  
Supplied—Capsules containing Panmycin phosphate equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin as novobiocin sodium, in bottles of 16 and 100. Now available: new Panalba Half-Strength Capsules in bottles of 16 and 100.

## Panalba\*

(Panmycin® Phosphate plus Albamycin®)

The broad-spectrum antibiotic of first resort

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 logical  
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 overweight patients

**meprobamate plus d-amphetamine**

... depresses appetite... elevates mood... eases  
tensions of dieting... without overstimulation,  
insomnia, or barbiturate hangover.

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**BAMADEX®**

MEPROBAMATE WITH D-AMPHETAMINE SULFATE LEDERLE

Each tablet contains meprobamate, 400 mg.; d-amphetamine sulfate, 8 mg.  
Dose: One tablet one-half to one hour before each meal.

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**SULPHO-LAC**



*The Balanced Acne Therapy*

MANUFACTURED BY  
**KELGY LABORATORIES**  
NEW YORK 35, N.Y.

## NEWS AND NOTES—Continued

After staining and cutting of the tissue, a beam of electrons produces an image which can be viewed on a photographic plate. The information thus made available opens up an entire new field for studying the manner in which drugs stimulate or inhibit cell functions thereby leading to increased ability to control disease.

### Preservation of Soft Tissue

A plastic surgeon of Duke University has reported on research that has kept skin alive and capable of growth for more than four years. Dr. Nicholas G. Georgiade stated that dog skin kept in special chemical solutions at a temperature of minus 49 degrees Fahrenheit was grafted successfully after 1,480 days of preservation. Previously, the longest recorded period was 400 days.

Reporting on another phase of the research, the Doctor said that corneal tissue from the eyes of experimental animals has been used in grafts after four months of preservation. Such tissue had never before been kept viable for more than a few days.

It is noted that the preservation of tissues is of practical importance to all surgical groups. Long-term skin banks could make unlimited quantities available for grafting in the treatment of burns, while successful preservation of corneas would permit the establishment of large-scale corneal banks. Currently used methods of preserving corneal tissue, which is used to replace diseased or damaged corneas, are limited to about 48 hours.

The effectiveness of preservation techniques developed at Duke is evaluated by the ability of the tissue to grow in nutrient solutions and by its ability to "take" when used in grafting. The investigators plan to use the prolonged-preservation technique for human tissues after further animal experimentation at the Durham Institution. They are currently working with various glandular tissues such as thyroid and adrenal in addition to skin and corneal tissues.

*Continued on page 214a*

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hypertension:  
**Apresoline®-Esidrix®**

Esidrix potentiates the action of Apresoline, producing good blood pressure response with low dosage, minimal side effects. Added benefits: Improves renal blood flow; relaxes cerebral vascular tone; provides diuresis in decompensated cases. Each combination tablet contains 25 mg. Apresoline and 15 mg. Esidrix.

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5/2700 mg

CIBA  
SUMMIT • NEW JERSEY



## NEWS AND NOTES—Continued

### Free Maternity "Dates and Data" Booklets Available to Physicians

A handy booklet designed to contain a full-term of appointments so that both the physician and the mother-to-be can plan a long term schedule will be sent to physicians upon their request by the Nu-Lift Company of Los Angeles, California.

In addition to the appointment schedule, the attractively-designed booklet contains a chart where the patient's increase in measurements may be noted for her own easy reference.

### Chicago Medical School to Expand Facilities

With the receipt of a deed to approximately ten acres of land in the Medical Center district of Chicago's west side, the impressive expansion program of the Chicago Medical School comes a step nearer to factual realization. The present plan includes four buildings initially. A ten-story, block long research institute will cost over four million dollars. A grant of one and one-half million has already been received from the U.S. Public Health Service. A 17-story medical school building and equipment is

expected to cost more than seven million dollars, and, in addition, there will be new faculty and student dormitory buildings.

### Congenital Esophageal Atresia

Surgeons at the University of Michigan Medical Center have successfully carried out more than 200 operations in a procedure which corrects one of nature's major mistakes. Congenital esophageal atresia involves the abnormal formation of the esophagus and the trachea. It is discovered at birth, and will prove fatal unless corrected by surgery.

The earliest known report of esophageal atresia was made by a physician named William Durston 300 years ago. However, the first successful operation which completely corrected the condition and saved a child was done at the University of Michigan Medical Center.

There are several varieties of the abnormality. Most commonly, the upper portion of the esophagus ends in a blind sack, and the lower portion grows out of the trachea. Since food cannot reach the stomach, the infant will die of starvation if the disorder goes uncorrected. A more immediate threat is that feedings will get into the lungs. If the baby survives strangulation, it then faces complications from pneumonia and exhaustion.

Correction of the disorder requires a three-hour operation by a team of six doctors, anesthetists and nurses. If there is too great a gap in the natural esophagus to permit joining its ends together, the surgeon must form the connection by transplanting a portion of the patient's own intestine. This requires a second operation when the child is two or three years old.

Intensive nursing care of the infant is needed following the esophageal operation. It is placed in an oxygen tent and treated with antibiotics for five or six days. About a week after the operation, the infant can begin normal feeding.

*Continued on page 218a*



# “R Day” *for the neuritis patient can be tomorrow*

“R Day”—when pain is relieved—can come early for patients with inflammatory (non-traumatic) neuritis if treatment with Protamide is started promptly after onset.

Protamide is the therapy of choice for either early or delayed treatment, but early use assures greatest efficacy.

For example, in a 4-year study<sup>1</sup> and a 26-month study<sup>2</sup> a combined total of 374 neuritis patients treated with Protamide during the first week of symptoms responded as follows:

*60% required only 1 or 2 daily injections for complete relief*

*96% experienced excellent or good results with 5 or less injections*

Thus, the neuritis patient's first visit—especially an early one—affords the opportunity to speed his personal “R Day.”

Protamide is available at pharmacies and supply houses in boxes of ten 1.3 cc. ampuls. Intramuscularly only, one ampul daily.

## PROTAMIDE®



*Sherman Laboratories*  
Detroit 11, Michigan



1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952.



*m m m...*  
**BREMIL®**  
LIQUID / POWDERED

**matches mother's milk**

in total infant nutrition with a physiologically balanced, complete formula — for a clinically smoother course of formula feeding

easier on everyone concerned — because BREMIL-fed babies are less subject to commonly occurring problems such as digestive upset, diaper rash, perianal dermatitis, and hyperirritability (only liquid formula food with a guaranteed standardized physiologic Ca:P ratio of 1½ :1)

efficient, well utilized protein, patterned on mother's milk, encourages excellent growth but helps avoid excessive renal solute load, thus guarding against stress-induced dehydration

*Standard Dilution:*

*Liquid* — 1:1 with water.  
13-fl.oz. tins.

*Powdered* — 1 level measure  
to 2 fl.oz. hot water.  
1-lb. tins.



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FOR INFECTIOUS  
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THROAT INVOLVEMENTS

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## NEWS AND NOTES—Continued

### Dr. Richard J. Bing

Dr. Richard J. Bing, one of the most outstanding contributors to the field of cardiovascular physiology, has been appointed William H. McGregor, Professor of Internal Medicine of Wayne State University. He will act as Chairman of the Department of Medicine. At the present time the Doctor holds a professorship in medicine at Washington University, St. Louis. He is also Director of the Washington University Medical Service, Veterans Hospital.

### Muskogee General Hospital Dedicated

The new Muskogee (Oklahoma) General Hospital, a nonprofit charitable organization built and owned by the state, was dedicated recently. It was financed by Federal Hill-Burton funds, Memorial Room Furnishing Funds, municipal bond issues and hospital funds. Service needs are provided by a convenient service nucleus. A feature of the new hospital is a central closed circuit broadcasting system, and a nurse-to-patient communications system. Provision has been made for increas-

ing the present 131-bed facilities to a maximum of 200 beds. The modern equipment includes a central air-conditioning system.

### New Research Building at Oregon

The Oregon State Legislature passed a \$1,297,000 appropriation for the construction of a nine-story research laboratory building on the University of Oregon Medical School Campus, Portland. The appropriation will match an equal sum allocated to the University in September 1958 by the U.S. Public Health Service through its National Advisory Council on Health Research Facilities Construction. The new building will contain a radioisotope center, equipment rooms, animal quarters, and scientific instrument shop. Construction will begin early in 1960, with occupancy scheduled for the spring of 1962.

### Combined Obstetrics and Gynecology Departments

Dr. George P. Berry, Dean of the Faculty of Medicine at Harvard Medical School has announced the joining of the research and teaching activities of two academic departments—obstetrics and gynecology—to form a single Department of Obstetrics and Gynecology. The decision to combine the two departments to increase the learning opportunities for tomorrow's physicians, professors, and investigators followed a two-year study by a committee at Harvard. Their findings included the proposed reorganization of the departmental structure and of the teaching programs concerned with lectures, seminars, and laboratory sessions. The goal of the new department will be to produce full-time teachers and investigators to meet the rapidly expanding need of this field of medicine.

Students specializing in this field will be expected to devote a minimum of two years to general surgical training, three years in obstetrics and gynecology, and two years in the basic medical sciences.

*Continued on page 220a*



New!...for appetite control



## Helps you keep your patient on your diet

**DOES MORE THAN CURB APPETITE . . .  
ALSO RELIEVES TENSIONS OF DIETING**

AN EXTENSIVE SURVEY shows that in 68% of overweight persons there is an emotional basis for failure to limit food intake.<sup>1</sup> Appetrol has been formulated to help you overcome this problem and to keep your overweight patient on your diet.

THIS NEW ANORECTIC does more than give you dextro-amphetamine to curb your patient's appetite. It also gives you Miltown to relieve the tensions of dieting which undermine her will power.

IN PRESCRIBING APPETROL, you will find that your patient is relaxed and more easily managed so that she will stay on the diet you prescribe.

**Usual dosage:** 1 or 2 tablets one-half to 1 hour before meals.  
**Each tablet contains:** 5 mg. dextro-amphetamine sulfate and 400 mg. Miltown (meprobamate, Wallace).

**Available:** Bottles of 50 pink, scored tablets.  
1. Kotkov, B.: Group psychotherapy with the obese. Paper read before The Academy of Psychosomatic Medicine, October 1958.

# Appetrol®

DEXTRO-AMPHETAMINE + MILTOWN®



IN  
*gastritis*

KEEPS THE  
MIND OFF THE  
STOMACH....  
THE STOMACH  
FREE OF PAIN

# Milpath

Miltown + anticholinergic  
*relieves anxiety and tension  
for enhanced antispasmodic effect*



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**HYPERTUSSIS®**  
pertussis immune globulin  
derived from adult venous blood

in whooping cough...  
shortens the course, lessens the severity, reduces the rate of complications. Also for prophylaxis.  
Available in one dose 1½ cc. vial.

**CUTTER**  
A Leader in Human Blood Fractions Research

**Polio IMMUNE GLOBULIN**  
gamma globulin  
derived from adult venous blood

modifies or prevents measles  
Available in 2 cc. and 10 cc. vials.  
For further information see PDR page  
664, Ask Your Cutter Man,  
or write to Dept. 010-B

**CUTTER LABORATORIES**  
Berkeley, California



## NEWS AND NOTES—Continued

### Additional Facilities at Georgetown

The U. S. Department of Health, Education and Welfare has announced a grant of \$350,000 to Georgetown University for use toward the construction of space for health research facilities. The grant is to be matched by the University. The construction made possible by this grant will be part of the Georgetown University Science and Basic Health Research Building. Groundbreaking is scheduled for the spring of 1960. Georgetown's new science building, estimated to cost three and one-half million dollars, will provide the basic science research facilities to supplement applied research in the diagnostic and research building recently completed in the Medical Center.

### Dr. William N. Hubbard

A former student of the University of North Carolina School of Medicine has been named Dean of one of the Nation's largest schools of medicine. Dr. William N. Hubbard, an alumnus of the University of North Carolina School of Medicine has accepted the deanship of the University of Michigan School of Medicine.

### Study of Diseases of the Muscle

A five-year grant of \$150,830 has been received from the National Institutes of Health for the purpose of supporting research in diseases of the muscle. The grant will enable Dr. David Grob, Professor of Medicine at the State University of New York Downstate Medical Center, to continue and expand his studies on the physiology and pharmacology of the neuromuscular system, with emphasis on muscle contraction and fatigue in normal man, and in the changes which occur in disease. Particular attention will be given to the cause of weakness in myasthenia gravis and other muscular diseases of unknown causes. The grant will be administered by the Research Foundation of the State University.

*Concluded on page 222a*

# new and unique

tetracycline therapy / new antifungal protection in better-tasting aqueous forms

New Mysteclin-F provides antifungal protection plus antimicrobial efficacy. Its outstanding antifungal agent, Fungizone, successfully fore-stalls monilial overgrowth. Its broad spectrum tetracycline base brings unsurpassed antibiotic pressure to bear against a wide variety of bacterial infections. Thus, even when high or prolonged dosage is required, new Mysteclin-F may be prescribed with confidence. New Mysteclin-F, unlike bitter-tasting nystatin, has the added advantage of a pleasing, mixed fruit flavor. It is certain to win patient cooperation

without coaxing. Your very young patients, so susceptible to fungal superinfections, are foremost candidates for the convenient syrup or drop form of new Mysteclin-F especially designed for children.

Supplied: Mysteclin-F For Syrup (125 mg. phosphate-potenti- ated tetracycline [HCl equivalent] and 25 mg. amphotericin B [Fungizone] per 5 cc. teaspoonful). Mysteclin-F For Aqueous Drops (100 mg. phosphate-potenti- ated tetracycline [HCl equivalent] and 20 mg. amphotericin B [Fungizone] per cc.).

\*MYSTECLIN® AND \*FUNGIZONE® ARE SQUIBB TRADEMARKS



**mysteclin-f**

phosphate-potentiated tetracycline with amphotericin B (Fungizone)

for aqueous drops for syrup

**SQUIBB**  
Squibb Quality — the  
Priceless Ingredient

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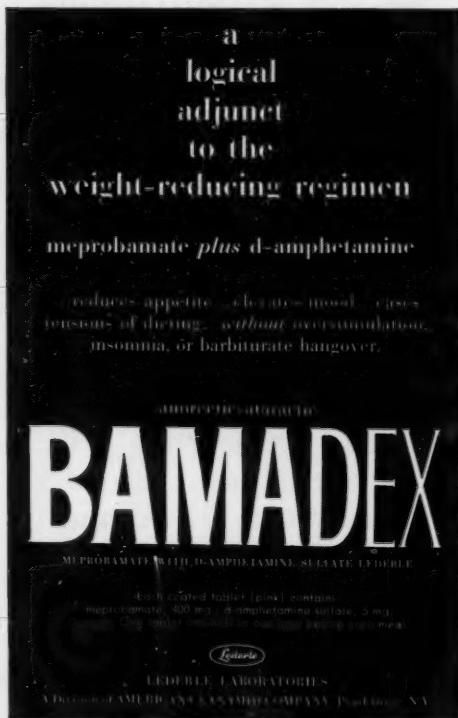
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## NEWS AND NOTES—Concluded

### Antarctica-Based Men Suffer Tension Headaches

Men stationed in Antarctica during the recent geophysical year frequently suffered from headaches—but not because of the cold, according to a Navy psychiatrist.

The headaches apparently were of emotional origin, Capt. Charles S. Mullin, Jr., Philadelphia, said in the *J.A.M.A.*

He explained that the men, living in very close quarters for a year, realized that they must control their aggression and hostility. The resulting tension caused the headaches.

Station medical officers felt that few if any of the headaches could be attributed to eye strain, poor ventilation, fatigue, cold, hunger, sinus trouble, or other common causative factors. Most of the headaches occurred during the winter months when there was comparatively little outside activity.

It was striking, Captain Mullin said, that at small stations there was a "remarkable absence of either physical fights or hostile-angry arguments." The explanation apparently lies in the fact that the men recognized the need for control and for avoiding open breaks. Each man realized that he was dependent on the good will of the "next man" and of the group as a whole in this "tight little world."

This abnormal control effort could not be achieved without some cost in terms of accumulated tension, he said.

The enlisted men were perhaps more fortunate in having more varied methods of handling the problem, Captain Mullin said. For example, there were violent swearing, vigorous horseplay, and "an interesting technique of exchanging frank and fearful insult, often quite personal and to the point but apparently rarely reacted to with much if any anger."

"The more sophisticated scientist-officer group were more limited in the effective techniques available and were perhaps under greater self-imposed necessity for careful control of their aggressions: hence their preponderance of headaches," the author concluded.

# Fostex® treats their acne while they wash



degreases the skin

completely emulsifies  
and washes off excess  
oil from the skin.

helps remove blackheads

penetrates and softens come-  
dones, unblocks pores and facil-  
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permits drainage of sebaceous  
glands.

Patients like Fostex because it is so easy to use. They simply wash acne skin 2 to 4 times a day with Fostex Cream or Fostex Cake, instead of using soap.

Fostex contains Sebulytic®,\* a combination of surface-active wetting agents with remarkable antiseborrheic, keratolytic and antibacterial actions . . . enhanced by sulfur 2%, salicylic acid 2%, and hexachlorophene 1%.

\*sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate and sodium dioctyl sulfosuccinate.

Fostex is available in two forms—



**FOSTEX CREAM**, in 4.5 oz. jars.



**FOSTEX CAKE**, in bar form.

Fostex Cream and Fostex Cake are interchangeable for therapeutic washing of the skin. Fostex Cream is approximately twice as drying as Fostex Cake.

Fostex Cream is also used as a therapeutic shampoo in dandruff and oily scalp.

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### DIAGNOSIS, PLEASE

(Answer from page 33a)

#### CANCER OF RIGHT KIDNEY

Note the enlargement and distortion of the right collecting system. The radiolucencies in the renal pelvis, ureter and bladder are due to blood clots.

### WHO IS THIS DOCTOR?

(Answer from page 73a)

SIMON BARUCH

### MEDIQUIZ

(Answers from page 93a)

1 (B), 2 (D), 3 (C), 4 (A), 5 (A), 6 (D),  
7 (C), 8 (C), 9 (E), 10 (C), 11 (E), 12  
(D), 13 (E).

### WHAT'S YOUR VERDICT?

(Answer from page 59a)

The Appellate Court regretfully reversed the lower court's decision, giving priority to the claim of the United States:

"It is unfortunate that a man in his last illness cannot be attended by a physician with some assurance that the doctor will be paid. The Federal statute was enacted in 1797 when the taxes imposed by the United States were few and light; the number who paid them were not many; and the income tax had not been thought of. Times have changed, and congressional reappraisal of the wisdom and justice of this statute would seem to be in order."

BASED ON DECISION OF  
SUPREME COURT OF WASHINGTON

first in preference for relief from cough

quiets the cough and calms the patient

Expectorant  
Antihistaminic

Sedative  
Topical anesthetic

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## EXPECTORANT

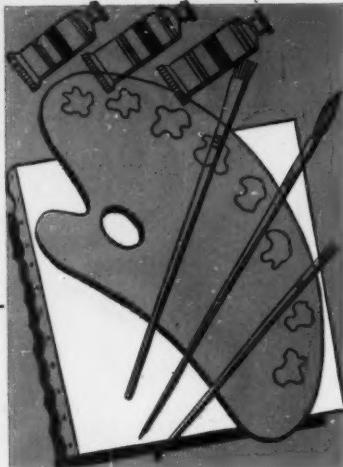
Promethazine Expectorant, Wyeth  
with Codeine Plain (without Codeine)



Philadelphia 1, Pa.

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**Pediatric PHENERGAN EXPECTORANT**  
with Dextromethorphan, Wyeth





## Covering the Times

This month's cover story could just as well appear in our travel section as it deals with medical activities in one of the popular skiing centers of New England. The painting by Melbourne Brindle shows a scene at Mt. Snow, West Dover, Vt., one of the largest ski areas in the country.

Against a background of snow, ski trails, trees and flags, Dr. Milton Wolf kneels to examine an accident victim. He is flanked by Sandy Safford (left) and Bill Toof, both members of the Ski Patrol.

Dr. Wolf is a general practitioner in Wilmington, Vt. He and Dr. Arthur Ellison, an orthopedic surgeon from Williamstown, Mass., make up the medical team at Mt. Snow. They are assisted by Mrs. Wolf who is a registered nurse. The hospital facilities include an orthopedic department and a room for minor surgery.

The National Ski Patrol is a voluntary organization of proficient skiers which supervises skiing activities and renders first aid assistance at all of the major ski slopes in the U.S. Sandy Safford, head of the patrol at Mt. Snow, passes along some words of warning to readers of MEDICAL TIMES and their families.

Most accidents, he says, are caused by "too much skiing for the person's physical condition, too much slope for their skiing ability . . . by skiing when tired, especially in late afternoon when the light is fading and slope condi-

tions have deteriorated . . . by carelessness bred of familiarity with a slope."

Artist Brindle spent a day watching the Mt. Snow Patrol in action (and visiting the sun terrace and outdoor swimming pool). He tells us that he gets great pleasure out of painting such 5-above-zero pictures in his studio at Bridgewater, Conn. He plans a return trip to Mt. Snow—next summer.

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Dr. Wolf with bow and arrow, and trophy.



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iron therapy  
without G.I. penalty*

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*solves the old  
problems of  
oral iron therapy*

<i>Previous problem:</i>	<i>Ferronord solution:</i>
Oral forms didn't give high enough absorption	5 times greater absorption than ferrous sulfate <sup>1</sup>
Older oral forms too slow in eliciting response	Elevates serum iron in 3 hours; <sup>1</sup> maximum reticulocyte response in 5 to 9 days <sup>2</sup>
Older oral forms produced gastric upset, nausea, constipation, etc., unless given with meals. But meals interfere with iron absorption.	Side effects "extremely rare"; <sup>3</sup> 95-98% of patients previously intolerant are Ferronord-tolerant. <sup>2</sup>

Ferronord is so well tolerated that it may be given between meals. This is a great advantage — for two reasons. It saves the "iron-intolerant" patient the misery of gastric irritation, cramps and the other usual iron side effects. And the between-meal administration of Ferronord means greater utilization of this iron therapy because there is less interference with its gastric absorption.

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**SUPPLY:** *Tablets*, bottles of 100; *Liquid*, 60 cc. bottles with calibrated droppers. Each tablet (or cc.) contains 40 mg. of elemental iron.

**Bibliography:** 1. Friedman, H. S., and Clancy, J. B.: *Geriatrics* 12:517 (Aug.) 1958. 2. Pomeranz, J., and Gadot, R. J.: *New England J. Med.* 257:73 (July 11) 1957. 3. Clancy, J. B.: *Am. Pract. & Digest Treat.* 6:1948 (Dec.) 1957.

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1. Giorlando, S. W., and Brandt, M. L.: Am. J. Obst. & Gynec. 76:666, (Sept.) 1958. 2. Weiner, H. H.: Clin. Med. 5: 25 (Jan.) 1958.  
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**Indication:** For the management of hyperlipemia associated with atherosclerosis.

**Dosage:** After each meal, hold one tablet under the tongue until dissolved.

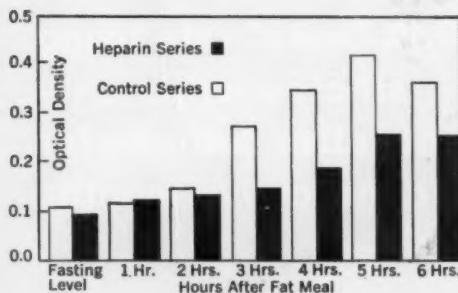
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1. Fuller, H. L.: *Angiology* 9:311 (Oct.) 1958.

2. Shaftel, H. E., and Selman, D.: *Angiology* 10:131 (June) 1959.



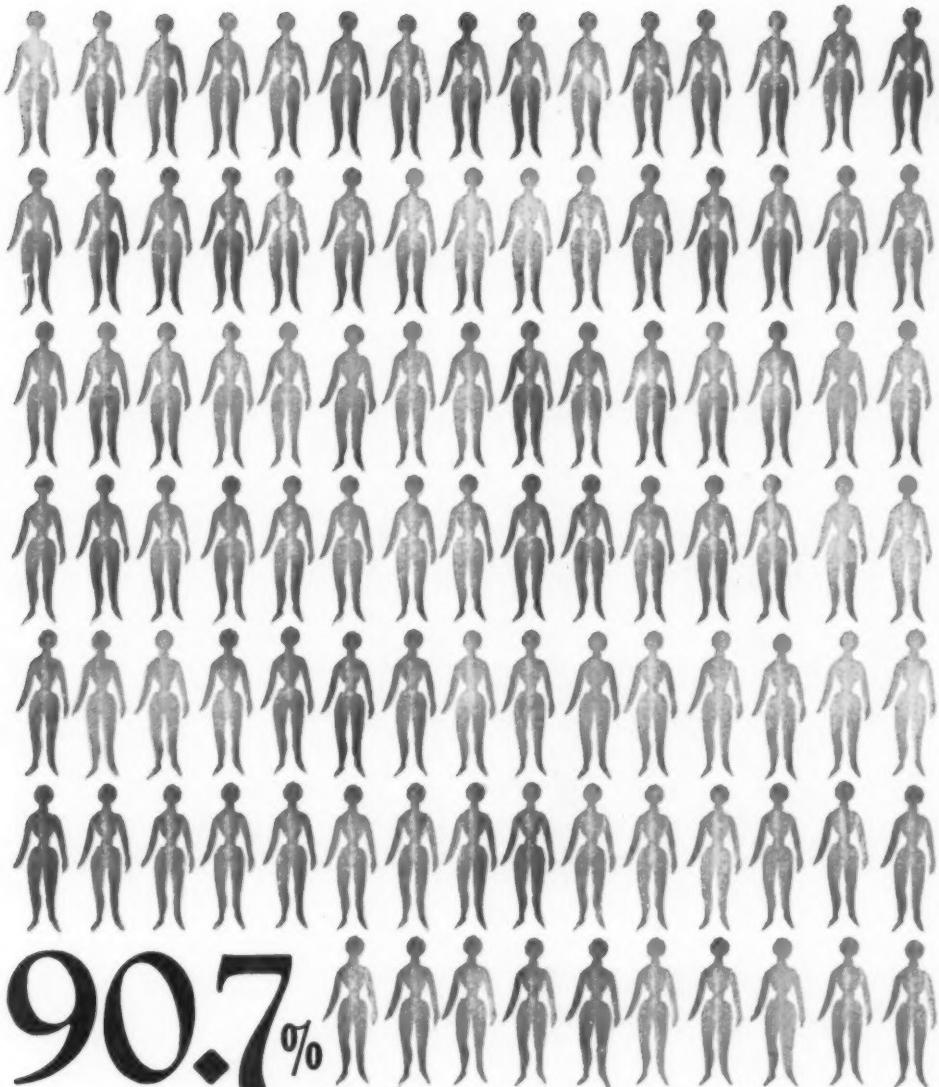
**WITH CLARIN, clear blood serum five hours after a fat meal:** After eating a standard fat meal as at left, the same patient has taken one sublingual Clarin tablet. Note marked clearing effect and reduction in massive fat concentrations in this unretouched photomicrograph (2500X).



Average serum optical density in 36 patients after fat meal with and without sublingual heparin.<sup>2</sup>

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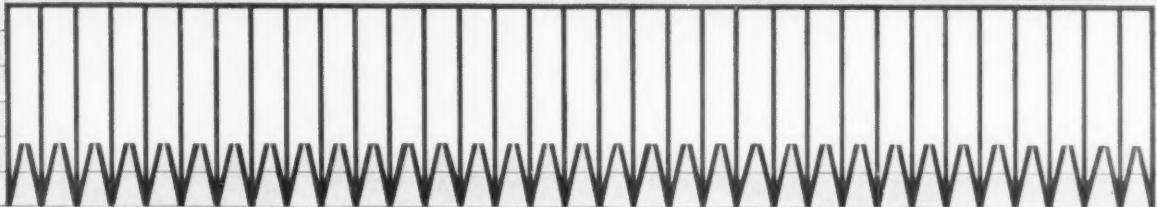
\*Murphy, H. S., *et al.*, Scientific Exhibit, A.M.A., Dec. 1-4, 1959, Dallas, Texas.

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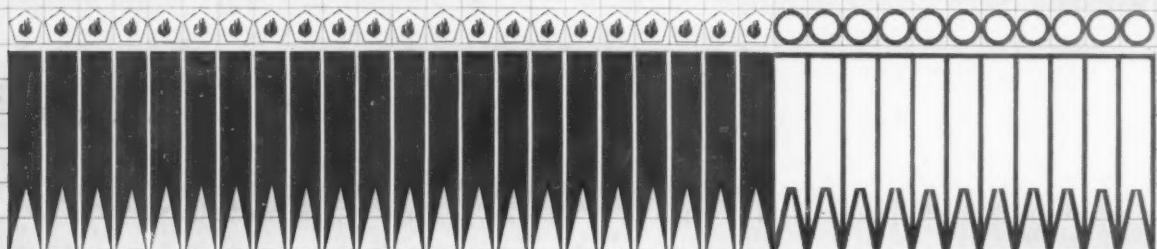
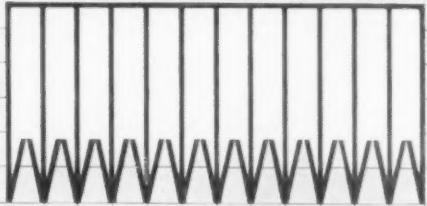
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who were refractory  
to other corticosteroids\*



22 were successfully  
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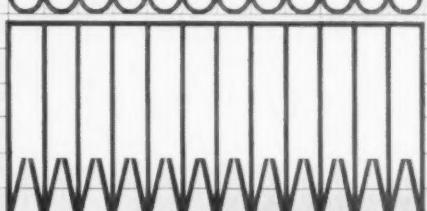
1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

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